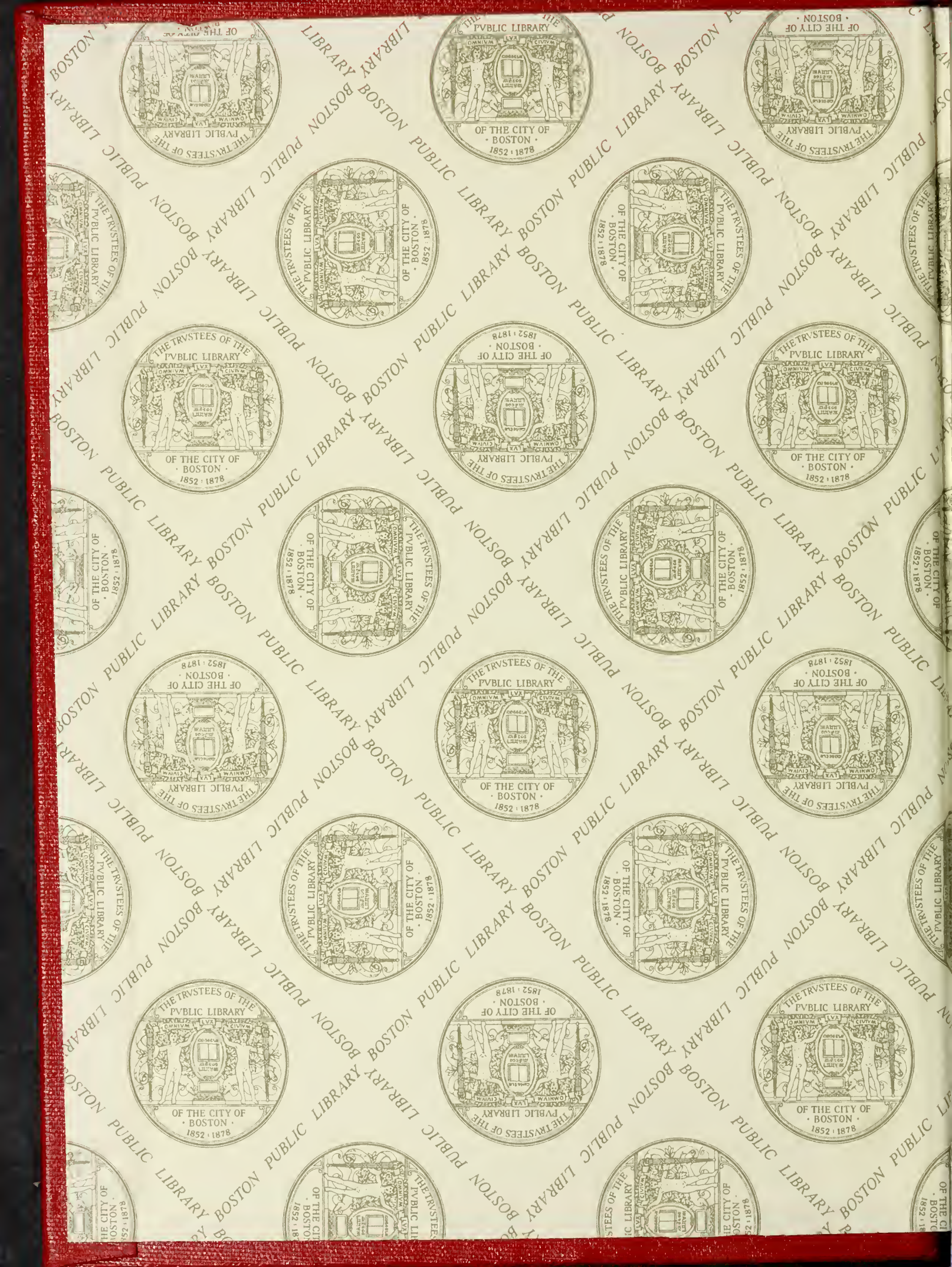


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# 1982 ANNUAL REPORT

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A YEAR OF HISTORIC FIRSTS



MASSACHUSETTS  
BAY  
TRANSPORTATION  
AUTHORITY

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1982

### **Cover Photograph:**

A Commuter Rail train of 5 rebuilt Budd Cars picks up passengers at Concord Station. Built in the early 1950's as self-propelled rail diesel cars, these units were completely rehabilitated as push-pull commuter coaches reentering service in 1982 and expected to last into the 21st century. This marked the first time MBTA equipment has been completely overhauled by an outside contractor at a substantial savings over purchases of new equipment.



# 982 ① ANNUAL REPORT

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BOARD OF DIRECTORS**

**2 DEPARTMENTAL  
REPORTS**

**3 COMPREHENSIVE  
PROGRAM FOR  
MASS TRANSPORTATION**

**4 CHARTS AND STATISTICS**

**5 APPENDICES**

**6 FINANCIAL STATEMENTS**

# THE JOURNAL OF THE

AMERICAN MEDICAL ASSOCIATION  
PUBLISHED WEEKLY  
CHICAGO, ILL., U.S.A.  
1915



# **① MASSACHUSETTS BAY TRANSPORTATION AUTHORITY** **1982 ANNUAL REPORT**

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On the final evening of the October 1982 100th Annual Convention of the American Public Transit Association, Richard Doyle (right), Urban Mass Transportation Administration — Region One Administrator, presented MBTA General Manager James F. O'Leary with UMTA's prestigious "Outstanding Public Service Award". The award is given yearly to transit authorities most responsive in their services and programs to the transportation needs of the public. The MBTA was specifically cited for its efforts in establishing work rules which cut costs of the daily operation of the Authority.

(For more on the Convention, see Appendix V.)





# **REPORT OF THE BOARD OF DIRECTORS**





**MASSACHUSETTS  
BAY  
TRANSPORTATION  
AUTHORITY**

Board of Directors  
50 High Street, Boston, Mass. 02110

TO: His Excellency the Governor, The General Court  
The Secretary of Transportation and the Advisory Board  
to the Massachusetts Bay Transportation Authority

The Board of Directors of the Massachusetts Bay Transportation Authority, in accordance with the requirements of Section 5(h) of Chapter 161A of the General Laws, hereby submits the Authority's Annual Report covering operations for the calendar year 1982. Included in the report is a description of the organization, recommendations for legislation and the comprehensive program for mass transportation prepared by the Executive Office of Transportation and Construction. Also included are departmental reports on accomplishments during 1982.

The net assessable cost of service, interest charged by the State Treasurer and Boston Metropolitan District expenses must be considered by the 79 cities and towns in their settlement with the Commonwealth of their 1982 accounts in November, 1983. The accounts are as follows:

	Without Additional State Aid	With Additional State Aid of \$94,414,127
Net Assessable Cost of Service	\$183,289,127	\$88,875,000
Interest Charged by State Treasurer on Temporary Borrowings (Estimated)	\$ 8,500,000	\$ 8,500,000
Expenses of Boston Metropolitan District	\$ 16,000	\$ 16,000
Net Cost to Communities	\$191,805,127	\$97,391,000*

\* House Bill No. 1, the state budget for Fiscal Year 1984 beginning July 1, 1983, provides additional contract assistance subject to legislative approval and appropriation that will cap assessments to the cities and towns at \$97.4 million.

The following statement shows the Authority's comparative net cost of service including all elements of cost for calendar years 1982 and 1981.

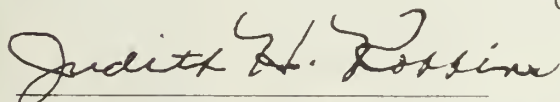
The balance sheet and statement of long-term debt of the Massachusetts Bay Transportation Authority as of December 31, 1982, and the related statements of revenue and cost of service, reimbursed cost of service, and source of disposition of funds for the fiscal year ended December 31, 1982, together with notes relating to these financial statements, are appended to this report.

Respectfully submitted,


Board of Directors  
Massachusetts Bay Transportation Authority



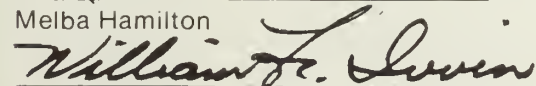
Frederick P. Salvucci  
Chairman



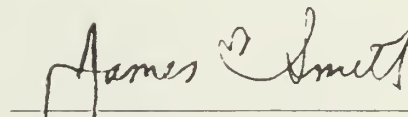
Judith H. Robbins



Melba Hamilton



William F. Irvin



James E. Smith



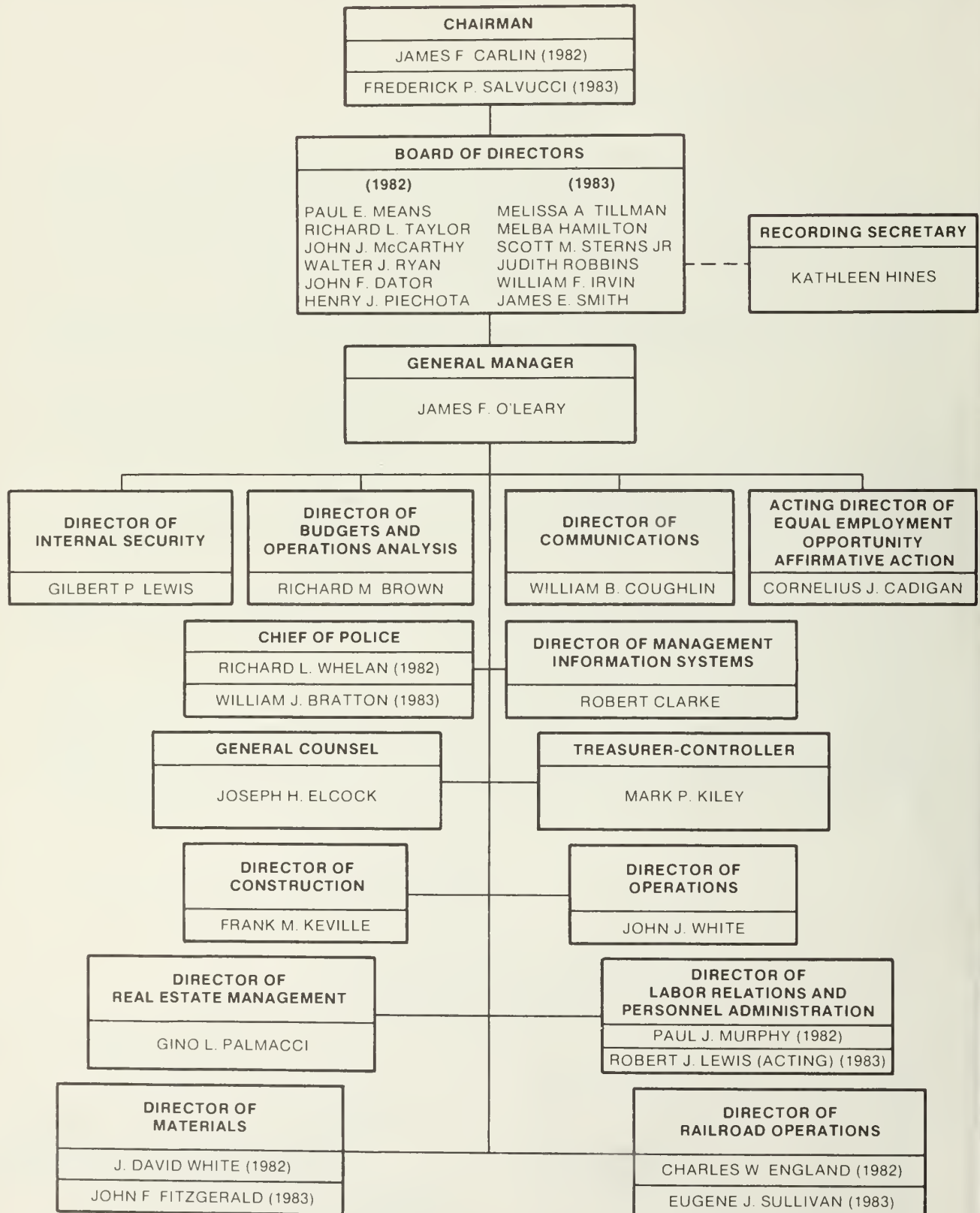
Scott M. Stearns



Melissa Tillman

# ORGANIZATION CHART

## ① MASSACHUSETTS BAY TRANSPORTATION AUTHORITY





# BOARD OF DIRECTORS

The Massachusetts Bay Transportation Authority's Board of Directors is a seven member body chaired by the Secretary of Transportation. It serves coterminously with the Governor according to a 1982 statute, and thus a new Board was appointed in 1983 by the incoming Administration.

To ensure that the Board is representative, statutory requirements dictate that members represent diverse geographical, political and professional backgrounds and affiliations. For example, two of the appointees shall not be residents of the 79 cities and towns constituting the Authority; no more than four members shall belong to the same political party; and at least one member of organized labor, one member of the finance community, and a transportation expert must be included in the composition of the Board.

1982



**James F. Carlin**

**Chairman of Board —  
Secretary of Transportation**



*Paul Means*

Former State Representative from Stoneham, expert in financial planning; former member of State Commission on Awarding of Public Contracts.



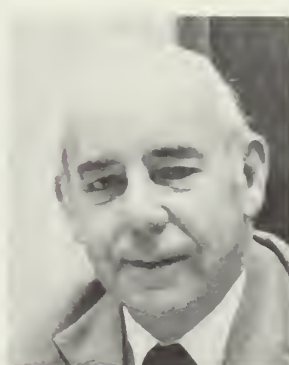
*John J. McCarthy*

Executive Secretary and Town Accountant for the town of Wakefield; former President of the Metropolitan Area Planning Council.



*Richard L. Taylor*

Native of Roxbury, and Senior Operations Officer for Hyde Park Development Corporation; former Rhodes Scholar with law degree from Harvard.



*Walter J. Ryan*

Business Manager of Local 4, Operating Engineer, and Chairman of the Committee of Transportation and Energy for the State Labor Council, AFL-CIO; lives in Canton.



*John F. Dator*

Owner of a real estate and insurance agency in Fall River, where he resides.



*Henry J. Piechota*

Auditor and Budget Director for the City of Springfield; lives in Longmeadow.

# BOARD OF DIRECTORS

1983



**Frederick P. Salvucci**

**Chairman of Board —  
Secretary of Transportation**



*William F. Irvin*

International Staff Representative of the AFL-CIO, actively involved in organized labor since 1950. Resides in Melrose.



*Judith H. Robbins*

Five-term councilwoman, city of Attleboro, and professional management consultant.



*Scott M. Stearns*

Director, National Association of Realtors; Former assessor of Town of Longmeadow, where he presently lives.



*Melba Hamilton*

Member of Boston Housing Authority and lifelong community activist in South Boston.



*James E. Smith*

Lynn Attorney, and graduate of Harvard University's John F. Kennedy School of Government. Former Executive Director of MBTA's Advisory Board.



*Melissa Tillman*

Former educator and expert in financial planning. She received an M.A.T. from Harvard Graduate School, and presently lives in Boston.



# **MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

**James F. O'Leary**

*General Manager*

50 High Street

Boston, Massachusetts 02110

Frederick P. Salvucci, Chairman  
and Members of the  
Massachusetts Bay Transportation Authority  
Board of Directors

Dear Mr. Chairman and Members of the Board of Directors:

The Massachusetts Bay Transportation Authority, which is the nation's oldest and fifth largest public transit agency, serves more than 500,000 riders daily. Our integrated service network features four rapid transit lines, a 250-mile Commuter Rail system, 150 bus routes, four trackless trolley routes, and a high speed trolley line.

The MBTA's 5500 employees comprise the largest public authority in New England, and are responsible for providing clean, fast, safe, and reliable service to meet the growing needs of the riding public. As our employees answered the public mandate for excellent transit by delivering improved services during 1982, we made outstanding progress in holding down costs by achieving greater worker productivity.

That dual achievement was one reason why 1982 was a historic year of change, innovation, and creativity at the MBTA. We were finally able to capitalize on the benefits of legislation passed in late 1980, but which was not upheld by the courts until a year later. The Management Rights Legislation enabled us to eliminate longstanding, inefficient work rules, offering possibilities for improved service and significant savings, which totaled \$59 million in 1982.

Using Management Rights, we awarded contracts to private industry for the cleaning of vehicles and stations and for the provision of janitorial and watchmen's services, the first time in the Authority's history we could make such a move. By assigning this work to private firms who specialize in these duties, we enhanced the efficiency of our network of transit employees, who focused on providing more and improved service, made possible in part because of the \$2 million saved by hiring the private contractors.

Another first for 1982 was the addition of 240 part-time employees. Transit operations — with demand greatest in the morning and then in the late afternoon rush hours — are ideally suited for part-time help. This move saved \$5.6 million in 1982, a figure that will increase as we continue to examine our scheduling needs to find areas conducive to part-time help.

Additional legislation passed in 1982 capped service assessments paid by the 79 cities and towns in the transportation district at \$95 million. Provision for additional state aid to the MBTA enabled the Authority to reduce rapid transit fares from 75¢ to 60¢. Our efforts given new momentum by these legislative mandates, we achieved increases in service levels that brought a 4.5% increase in ridership during the last half of the year. The new riders generated \$2 million in revenue that helped offset operating expenses.

While much energy in 1982 was devoted to exploring the possibilities created by new legislation, we continued to improve and refine our traditional resources with ambitious maintenance, modernization, and construction programs.

Vehicle, track, and station improvements drew new riders to our Commuter Rail system, which saw a record ridership of more than 10 million and record revenues of \$15,306,000. A record-high on-time performance of 92.6% should make regular riders of those new passengers. The MBTA became the first transit agency in the United States to transform obsolete, self-propelled Budd Rail Diesel cars into efficient, comfortable coaches. That innovative maintenance move saved 66% of the cost of purchasing new coaches.



After a major rehabilitation, the long-closed Arborway Branch of the Green Line was reopened, as were several rapid transit stations. Renovations to the Dorchester Branch of the Red Line were completed and that line reopened in January.

The Authority's police force was expanded for the first time in a decade with the addition of 10 new officers.

With more than \$1 billion in ongoing construction projects underway, the MBTA has contributed significantly to the health of the state's economy. The \$600 million Red Line Northwest Extension moved one step closer to completion in 1982 and the new Harvard Station, the first leg of one of the most technically difficult projects anywhere in the country, will be ready for opening in the Fall of 1983.

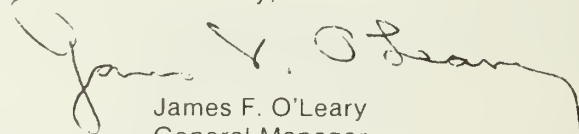
The largest construction project in Boston's history, the \$800 million Southwest Corridor Orange Line Relocation Project, also proceeded on schedule. With widespread community interest and support, this project will generate jobs and economic development and provide excellent transportation services when completed in 1986.

The MBTA awarded the first contracts for a \$100-million renovation of South Station into a multimodal transportation facility. The facility will bring to state commuters a first-class rail, bus and rapid transit complex while preserving the integrity of a national landmark.

In the 96 years since Boston became the home for a cohesive, comprehensive mass transit system, the list of MBTA significant achievements has continued to grow. As you read this Annual Report you will note historic milestones that have been reached in virtually every department and section. Throughout the entire system we are undergoing a vast program of construction, modernization, rehabilitation, productivity increases, and service improvement and expansion.

The commitment that Governor Michael S. Dukakis has made to further improving our mass transportation system is an inspiration to the riders and employees of the MBTA. We look forward to working together with you in the years ahead in implementing the policies you set forth to make our transit system second to none.

Sincerely,

A handwritten signature in dark ink, appearing to read "James F. O'Leary", written in a cursive style.

James F. O'Leary  
General Manager

# 2 DEPARTMENTAL REPORTS





**James F. O'Leary**

**General Manager of the  
Massachusetts Bay Transportation Authority**



James F. O'Leary, formerly Undersecretary and General Counsel of the Executive Office of Transportation and Construction for the Commonwealth of Massachusetts, was appointed General Manager of the Massachusetts Bay Transportation Authority (MBTA) in April, 1981.

Mr. O'Leary had been appointed Assistant Secretary and General Counsel for the Executive Office of Transportation and Construction in January, 1979. Shortly thereafter, he was promoted to the position of Undersecretary and General Counsel.

A graduate of the University of Massachusetts at Boston, Mr. O'Leary earned his J.D. from Suffolk University in 1973. That same year, he was admitted to the Massachusetts Supreme Judicial Court and became Legal Counsel to Congressman John Joseph Moakley.

An active member of the community, Mr. O'Leary serves as a member of the Board of Directors of the Southwest Boston Community Services; Treasurer for the Board of Governors, University of Massachusetts Foundation; member of the Massachusetts Bar Association and a corporate member of Faulkner Hospital and the Parkway Boys Club.

# EXECUTIVE OFFICES

The *Executive Office* is composed of the Board of Directors, the Office of the General Manager, the Office of Budget and Operations Analysis, the Office of Equal Employment Opportunity, the Office of Internal Security, and the Communications Directorate. The General Manager, Chief Executive of the Authority, executes the policies of the Board.

## Office of Budget and Operations Analysis

The *Office of Budget and Operations Analysis* monitors the Authority's operating budget and is responsible for cost efficiencies and operations improvements. It ensures cost effective, affordable programs that conform to the General Manager's priorities.

In 1982, the Budget Office worked closely with the MBTA's Operating Departments to develop performance and productivity standards and goals. Furthermore, the Budget Office conferred regularly with department management to establish reporting standards and make certain that goals were met.



New cost-saving techniques, increased productivity, and increased efficiency guidelines all contributed to a 1982 revenue mile increase of 1.5 million miles.

As a result of new cost-saving techniques, increased productivity, and increased efficiency guidelines, the Budget Office achieved important gains:

- The 1982 MBTA Net Cost of Service-Loss was at its lowest figure since 1979.
- Revenue miles increased by 1.5 million miles and are expected to increase by another 1.3 million in 1983.
- Ridership revenues increased by 14%.
- Part-time employees were integrated into schedules, reducing full-time manpower to its lowest point in five years, and thus saving an estimated \$3.1 million in wages, collateral costs, pension payments and Blue Cross/Blue Shield.



- Retroactive 1982 pay raises awarded by arbitration to the Carmen's Union at year's end were paid without supplemental funds. Most of the money required to pay these raises was available because of the cost-saving implementation of Management Rights, and because of lower interest rates on bond and note authorization.
- Increases in the cost of materials and services were reduced from 11% to 5%.

## Communications Directorate

### Media Relations Office

*Media Relation's* largest project of the year was the coordination of press coverage for the 100th Annual American Public Transit Association Conference, an event hosted by the T from October 17 to October 20. Attended by more than 3,000 people, the Conference was covered by more than 30 national publications, as well as local and national broadcast outlets. Media Relations supervised all publicity surrounding the Conference, including daily press briefings on noteworthy activities and issues.



Local and national media were well represented at the 100th Annual APTA Conference. Media Relations supervised all Conference publicity.

### Sales and Marketing/Pass Program Office

The *Sales and Marketing/Pass Program Office* continues to hold a reputation as a model for transit pass program operations. The Pass Program offers its ridership six different monthly passes with savings up to 20% per month over regular route fares.

By December, the MBTA's Pass Program, operating out of three sales locations, was working together with 540 companies, 21 banks, 12 colleges, and 4 post offices. In that month, a record 84,000 passes were sold, yielding \$2.6 million in revenues. Overall, 1982 pass sales were at an all time high of 890,000, totaling \$26 million — nearly 30% of the system's total transportation revenues.



The cost savings and convenience T riders have discovered through use of monthly passes has had a significant impact on the system's 5% increase in ridership during 1982. As further incentives to purchase a pass, the Program has also offered scores of discounts including reduction in auto insurance premiums, shopping and dining discounts, admission discounts to sporting and entertainment events, and free Sunday rides for a passholder's guest.



A Pass Program representative stands by ready to answer any questions at the Washington Street Concourse pass sales office.

Pass Program marketing activities also resulted in:

- An increase of 5% in the number of companies (310) offering variable work hours.
- The development and placement of 400 bus rear display signs, 40 billboards, and 16 roadsigns on major arterial roadways encouraging the use of public transit.
- The processing and issuing of 30,000 senior citizen and 9,200 special needs photo identification cards, an all time high.

## Marketing and Information Services

To meet the increasing demand for system timetables, the Public Affairs Department produced and disseminated a record number of schedule cards (3.5 million). These cards were publicly available at a number of T locations and distributed by 450 community outlets that participate in the T Aid Program. In addition, the Department implemented a map sale program, producing 5 million maps which could be purchased at 75 locations.

Other Information Service activities of note were:

- The design, production, and distribution of over 150,000 promotional pieces, including information flyers, posters and cards to inform riders of substitute bus service during Beacon Street Green Line reconstruction and to announce the return of trolleys to the Arborway Line after major rehabilitation work.

- The production and distribution of 50,000 T Aid brochures and 200 promotional carcards.
- The distribution of 60,000 wallet-sized MBTA maps to system riders.
- The reinstitution of a monthly MBTA newsletter after a seven year hiatus.

Because the MBTA is firmly committed to integrating public opinion into its plans for service and fare changes and because it is committed to an informed ridership, the Public Affairs Department sponsored and participated in over thirty public forums in 1982. It also expanded its Consumer Education/Information Network and offered educational system tours to schools and to civic, transportation and special interest groups.

Public Affairs responded to over 7,000 petitioners, supporting or opposing proposed service changes. It also responded to a weekly average of 350 commendations and complaints, whether they were written, telephoned or walked-in. Collectively, the Department received and responded to 400,000 information request calls. These requests included: information regarding T and Commuter Rail schedules and fares; explanations for service delays and diversions; the purchase of monthly passes; schedules of private carriers; attendance of department employees at civic organizations and town meetings.

## Equal Employment Opportunity and Affirmative Action

In 1982, the MBTA became one of the first transit agencies in the nation to receive federal approval for its Equal Employment Opportunity and Affirmative Action Plan. As of November, 22% of the total work force was comprised of women and minorities.

Assistance from the Contractor's Association of Boston (CAB) to find minority and female subcontractors for Southwest Corridor construction projects was expanded with two supplemental agreements. During the year, 42 contracts were awarded to minority and female-owned firms, totalling over \$31 million, and a 7.4% increase from 1981.

Community visibility for affirmative action was enhanced by staff and CAB participation at corridor neighborhood meetings and activities. Almost half of the discrimination cases pending before state and federal commissions were resolved during the year. Since 1980 a backlog of 42 cases have been finalized.

## Internal Security Directorate

The *Internal Security Directorate* was created by the Board of Directors in May of 1982. This Directorate was established to assist management by conducting investigations to prevent cases of fraud, theft, corruption, illegal practices, conflict of interest, or the appearance thereof by officials, employees, contractors, or other persons who receive monies from or through the Authority.

Since its inception, this Department has received and investigated allegations of:

- Larceny of Authority property.
- Conflicts of interest on the part of Authority employees, its agents, and persons doing business with the Authority.
- Arson.
- Workmens' Compensation fraud.
- Payroll fraud, including falsification of payroll records by Authority personnel.
- Organized crime affiliations of outside contractors.
- Fraud perpetrated by outside contractors through use of inferior or substandard material in non-accordance with contract specifications.
- Outside contractor fraud through misreporting of revenue.
- Narcotics use by employees of the Authority.



- Abuse and misuse of Authority vehicles.
- Suspected bid rigging by Authority personnel.
- Death threats to State Auditors working on MBTA audits.
- Failure to perform in accordance with contract requirements.

This Department completed a comprehensive study of fare loss by the Authority. This report is available to any interested parties.

Some of the above investigations and inspections are ongoing and some have been referred to other agencies for disposition. This Directorate continues to serve as investigative liaison between the Authority and all other law enforcement agencies.

## OPERATIONS DIRECTORATE

### Transportation Department

This year, marked by accomplishment and change, brought greatly increased service. Vehicle reliability went up and fares were reduced. In each successive timetable levels of service were expanded, and yet the total cost was less than 1981.

The Program to Increase Ridership was successfully implemented. Program goals focused on reversing ridership trends and the negative environmental impacts of automobile pollution. Passenger gains of up to 5% were achieved during the year.

An analysis and review by Operations and Service Planning contributed to the reduction of rapid transit fares from 75¢ to 60¢ in May. Ridership data for the last six months of 1982 indicates an increase of four to five percent since the fare rollback. Revenue reduction of \$6.6 million was expected over the last months due to the fare reduction. The actual reduction was only \$4.3 million, which is attributed to the daily ridership gain.



Peak hour service was increased on 22 routes this year and Sunday service was extended to 1 a.m. on all modes.



Specific improvements include peak hour service increases on more than 22 routes, restored service to six routes, and the resumption of Arborway streetcar service. Sunday service was extended to 1:00 a.m. on all modes. Both rapid transit and Green Line service improved during peak and off-peak hours. Weekday rapid transit service grew by 4,500 car miles. Twenty other routes were impacted by changes including extension, re-routing or restored service.

Despite a lower net cost of service and level funding from local subsidies, there was measurable increase in reliability. In November, 98.96% of all trips were completed. That figure is the highest recorded since service statistics have been compiled. For 11 months, 100% of the bus fleet was available for systemwide schedule requirements. Sustaining a trend since 1979, numbers of dropped trips on all modes decreased.

Savings specifically accrued by the Transportation Department's implementation of the Management Rights Act contributed toward the Authority's cumulative \$59 million in savings realized since the Act's implementation. Reduced cost initiatives included:

- The first time employment of 200 part-time operators for exclusive use during the rush hour.
- The contracting out of janitorial services for the cleaning of all T administrative facilities, interior cleaning of buses at seven garages, interior cleaning of Red Line vehicles, and cleaning of a number of T stations with total annual savings of \$2.1 million.
- The integration of part-time gatemen into the summer timetable with an annual savings of \$165,000.



*The Ride*, the MBTA's para-transit service for special needs individuals scheduled over 82,000 trips in 1982.

Access was broadened for special needs groups including elders and the handicapped. The Ride, a specialized para-transit service offering door-to-door transportation, scheduled over 82,000 trips. Authority 1983 plans will nearly double the service area. Strengthened distribution for charter service runs grew 55% and covered a wider geographic area.

## Rail Equipment Maintenance

In 1982 productivity gains were made due to the implementation of Management Rights and the information updates possible through computer applications.

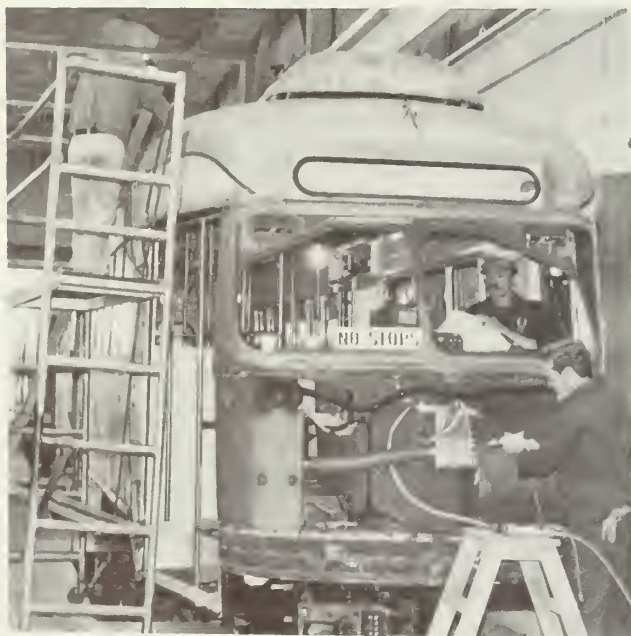
New cars for the Orange and Blue Lines underwent comprehensive preventive maintenance programs. The cars, manufactured by Hawker-Siddeley Canada, Inc. have proven to be some of the system's most reliable. Vehicles consistently met all daily revenue needs.

Preparations for Red Line northbound expansion included complete vehicle refurbishment of the 20-year old "Bluebird" cars. Since the 1977 car reconstruction program began, 24 cars have been returned to use. Nine more vehicles are nearing completion and will help meet needs for additional cars with the opening of Quincy Adams Station and Alewife extension.



T crews have completely rebuilt 24 20-year old "Bluebird" cars. These vehicles will help meet increased service demands that will come with the opening of new Red Line stations.

The Green Line Light Rail Vehicle (LRV) revenue fleet was expanded by 35 cars. The LRVs which were being used on the Commonwealth Avenue and Riverside lines were also put into service on Beacon Street. As a result, three of the four lines now offer 100% LRV service. LRV availability has been increased by establishing rehabilitation and modification programs, developing new supply sources, and supplemental procurement.



54 PCC trolleys, some dating back to the early 1940's, have been reconstructed in T shops.

The reconstruction of 32 42-year-old Presidential Conference Committee (PCC) cars continued. Under this program, 54 vehicles have been returned to service.

Better management coordination was the result of a consolidation, moving all of the Automotive Equipment Shops in several Everett buildings to one location under the Rail Department. The major \$35 million facility continued toward the 1985 completion goal, without serious delay despite a fire in April.



## Automotive Equipment Maintenance

For the first time in the Authority's history, productivity standards were instituted by each of the seven garages. Direct impact showed in less frequent service interruptions. New systems and procedures combined in improved bus vehicle performance:

- Miles between breakdowns increased to 2,300 from 1,500.
- Miles between transmission rebuilds increased from 77,000 to 92,000 miles.
- Road calls dropped almost 50%.

Buses provided 240,000 miles of scheduled service, requiring the inspection, maintenance and repair of over 1,000 vehicles. Also maintained at 10 separate division facilities were trucks, snow-fighting equipment and other heavy-duty apparatus. Fleet maintenance demands are diverse, including four different manufacturing sources, and a service age ranging from six months to 19 years.



As a direct result of the institution of productivity standards by Authority garages, miles between breakdowns rose while road service calls fell almost 50%.

One hundred percent bus service availability was met for 11 months this year. That objective to improve reliability, along with escalating new purchase costs, resulted in the awarding of an outside rehabilitation contract. For the first time in Authority history, outside sources were scheduled to overhaul 70 older bus models. The 1983 rebuilding project will effectively return up to 10 years of service, at a cost less than one-third of new equipment.

A reinstituted purchase program brought 168 new Flxible buses into service. The addition helped to reduce average fleet age from 8.3 to 7.1 years at the start of 1983.

A new job classification of Machinist Repairman Third Class was established. Freeing higher-trained mechanics for more specialized tasks, the initiative proved a factor in both cost savings and productivity.

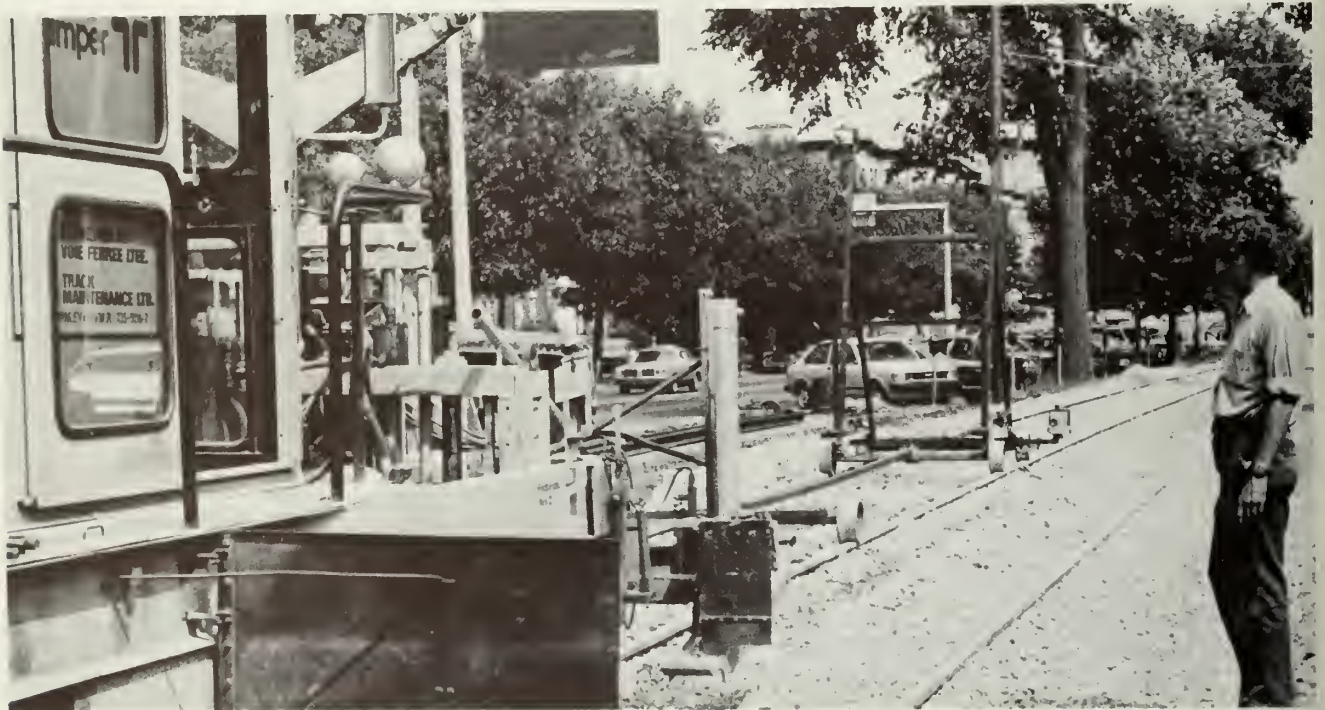
Plans for fleet appearance improvements were made by newly assigning personnel for superficial body repair, and interior cleanings.



## Engineering and Maintenance

A comprehensive Five Year Plan set standards that will result in a safer, faster and more reliable transit system. The plan emphasized the utilization of Track Improvement Grants as a primary means for rebuilding and upgrading facilities. The extensive effort begun in 1979 will replace all track more than 20 years old. On completion in the late 1980s a relatively new track system will result systemwide.

The year saw completion of the 5.5 mile Red Line Mattapan High Speed Trolley Line, and six miles of the Dorchester Rapid Transit Extension (Ashmont to Columbia). On the Green Line, 2.3 miles of Beacon Street track were upgraded, providing a smoother, more reliable structure. The physical improvements notably enhanced the appearance of the neighboring commercial stretch.



2.3 miles of the Beacon Street Green Line route have been upgraded providing a smoother more reliable ride over one of the country's oldest trolley routes.

A complete rebuilding of the Lake Street Yard, near Boston College, brought the installation of two new crossovers. Both will facilitate the maneuvering of LRV trolleys into service by yard personnel. Additionally, 10 storage tracks in Riverside Yard were 60% reconstructed, and will be completed early in 1983.

System modernization and energy conservation measures contributed to a drop in energy consumption for the fifth consecutive year. Energy cost savings are estimated at an annualized \$6 million for 1982.

In several areas, the Engineering and Maintenance Department developed modern technologies for a number of improvements and system application.

Among these technologies was the retrofitting of cab signaling equipment to Red Line cars. Its addition to 82 cars permitted higher speeds, and allowed continuous control of all train movement. The use of continuously welded rail, concrete ties, and resilient fasteners in all new construction work added to ride quality.

Daily maintenance requirements and emergency defects are handled by Engineering and Maintenance for the entire system. Under this category and through standards established in the Five Year Plan, several service improvements were recorded:

- Orange Line service interruptions dropped 75% due to the installation of 30,000 "anchors" to eliminate rail movement.

- More frequent inspection and preventive maintenance decreased overhead trolley wire breaks by 20%.
- Systemwide installation during the year included 21,800 feet of rail, 2,760 cross ties, and 6,000 feet of guard timber for improved ride quality.

Safety coordination and information efforts continued through Transit Safety Awareness and On-site Construction Safety programs. Training was provided to area firefighting, medical technician and police personnel to help improve response. The Safety and Training Unit regularly monitored safety procedures and investigated industrial accidents with other Authority departments.



Under the watchful eye of an Authority inspector, local firefighters learn how to determine if a third rail is energized. This exercise is part of the T's monthly safety training program for area emergency personnel.

The Engineering and Maintenance Department implemented a series of measures that lowered costs and introduced savings. These actions were possible through prerogatives from Chapter 581. Initiatives implemented were:

- The reassignment of personnel for maintenance work saved an estimated \$30,000 in annual overtime.
- Three man years of productivity gain in preventive maintenance through reorganization of the track-walkers' schedule.
- Fifty percent reduction of most welder and grinder teams required for repair tasks.
- Evaluation and readjustment of crew sizes once set by collective bargaining agreements, to identify efficiencies and personnel savings.



# RAILROAD OPERATIONS DIRECTORATE

The *Railroad Operations Directorate* functions as the MBTA's management team responsible for the operation of the Commuter Rail system. 1982 was a banner year for the Authority's 280-mile Commuter Rail network as more people rode commuter trains than ever before.

The system, managed by the Railroad Operations Directorate, reached a number of milestones. Total ridership broke the 10 million mark, the highest in Commuter Rail history and an almost 10% increase over 1981. Revenues increased over 18%. On-time performance reached a high of 92.6%. As a result of increases in ridership, passenger revenues made a greater contribution to the cost of operation; the percentage of operating costs paid by revenues increased from 22% to 25%. Average revenue per train has doubled since 1979.

On-time performance, improved track structure, and new or rebuilt vehicles have contributed greatly to the increased public acceptance of Commuter Rail as a viable alternative means of travel. In the latter part of 1982, the return to service of 32 worn and antiquated Budd Rail Diesel cars as rebuilt modern push-pull commuter coaches, and the conversion of 17 steam heated coaches to electric heat has helped provide a more comfortable commute for riders and reduced railroad operating costs.

There were substantial improvements made to track last year on the Franklin, Framingham, Fitchburg, and Lowell lines. These upgrades will result in reductions in travel time, encouraging further growths in ridership during 1983.

1982 also saw implementation of a new Operating Agreement with the Boston and Maine Corporation which operates the trains under contract with the Authority. The contract contains incentives for expeditious operation. 1982 on-time performance figures indicate the effectiveness of these incentives.

The statistics stand as a testimony to the fact that Railroad Operation's expertise in planning and development has resulted directly in unparalleled numbers of travelers flocking to MBTA railroad depots. In the eight short years since the Authority first shouldered the operation, the Commuter Rail story has evolved from one of declining ridership and deteriorated equipment to a log of record patronage and revenues, modern equipment, and resounding success.



Exemplary on-time performance, improved track structure, and rebuilt vehicles like the Budd coaches pictured above contributed to a record 1982 commuter rail ridership that surpassed the 10 million mark.



Future growths in commuter rail ridership will be encouraged by improvements recently made to the track structures on the Franklin, Framingham, Fitchburg, and Lowell routes. These upgrades will allow reductions in travel time.



# CONSTRUCTION DIRECTORATE

The *Construction Directorate* moved forward in 1982 with two of the largest projects in the history of the Commonwealth of Massachusetts: extension of the Red Line to the north and the completion of Quincy Adams Station to the south, and the Southwest Corridor Orange Line relocation. Additionally, plans were made to complete a massive systemwide improvement program which will involve station modernization, tunnel rehabilitation, power and track improvements, Commuter Rail upgrading, and maintenance facility improvements and reconstruction. The sum total of these expansions and renovations will mean an MBTA which is 80% new or reconstructed within seven years.

Because of the ongoing rehabilitation and construction projects, the MBTA is the largest single contributor to the State's construction industry. Currently, the MBTA has spent \$1.5 billion on new construction projects providing an estimated 6,000 jobs. Long term economic benefits will be realized as new stations are opened during the next three years. With the locations of new industrial and retail activities along the Southwest Corridor, for example, it is estimated that 12,000 permanent jobs paying \$150 million in wages and yielding retail sales of \$150 million will result.

## 1982 Construction Highlights

During 1982, the Federal Urban Mass Transportation Administration awarded the Authority over \$286 million in capital grant funds. Thirty construction contracts were awarded totalling nearly \$226 million, a \$76 million increase over 1981.

### Red Line Northwest

The *Northwest Rapid Transit Extension Project* is a \$620 million undertaking extending the Red Line 3.2 miles northwest from its current Harvard Square terminus through Porter Square and Davis Square to Alewife. It is estimated the Extension will attract over 22,000 new riders to the T's most heavily utilized route. Approximately half of these riders currently commute by auto while the other half will be people, such as the elderly, who might otherwise not travel at all.

The critical need for efficient and substantial mass transit service to be provided by the Extension has been clearly indicated. A majority of residents in the northwest corridor are employed in Boston and Cambridge, and they will now have a direct transit link to their area of employment. Current feeder bus service through the vicinity to be served is amongst the heaviest used in the system. The Extension will provide direct service eliminating many buses from clogged streets.

The new station at Alewife in Cambridge provides an example of the impact the new route will have on its environment. Over 8,000 people, or 10% of Cambridge's work force, is employed in the vicinity of the construction. Estimates predict that this work force will double in the next 10-15 years. \$210 million in new or rehabilitated construction is planned near Alewife including 3 million square feet of offices, residences, and light manufacturing. Developers credit this to the incentive of immediate proximity to the Red Line. New taxes generated by this development will add from \$5 million to \$10 million in Cambridge revenues.

Construction has generated a minimum of 6,000 man years of employment including 2,000 site jobs and 4,000 related jobs. Indirect employment has resulted through the need for \$68 million in materials, half of which is being manufactured locally.

Through the use of new tunnels and the reuse of abandoned railroad rights-of-way, the entire project is being completed without the disruption of individual neighborhoods, leaving densely populated areas intact. The project, nearly 75% complete, is on schedule and within budget. It is scheduled to be completed by early 1985.



Davis Station, one of four new stations on the Red Line Northwest Extension is scheduled to open by early 1985. (Courtesy Goody, Clancy, and Associates, Inc., Architects)

## Quincy Adams Station

*Quincy Adams Station* on the Braintree Branch of the Red Line is the final link in the South Shore Extension Project which was otherwise completed when the Branch opened to Braintree in 1980. Situated between Quincy Center and Braintree Stations, Quincy Adams is designed to service the transportation needs of an entire region. With a 2,000-car parking facility and direct access from overcrowded highways leading into Boston from the South, the station will relieve traffic congestion as well as allow the state to proceed with plans to rebuild these highways. Construction of the \$33.2 million project was completed during 1982, and the station is scheduled to open in the fall of 1983, with the completion of a ramp system connecting Quincy Adams Garage with Routes 3 and 93/128.





Soaring pedestrian ramps link Quincy Adams Station's two parking garages with a busway that runs down the center. Quincy Adams is located on the Braintree Branch. With the station's scheduled opening in the fall of 1983, the South Shore Extension, which was otherwise completed and opened in 1980, will be finalized.

## Southwest Corridor

The *Southwest Corridor Project* is the single largest construction undertaking in the history of the City of Boston. The Project involves the realignment of the MBTA's Orange Line, which has traversed an elevated structure through the city's southern portion since 1909, and a major Amtrak and Commuter Rail route into a depressed right-of-way surrounded by new parks, and commercial,



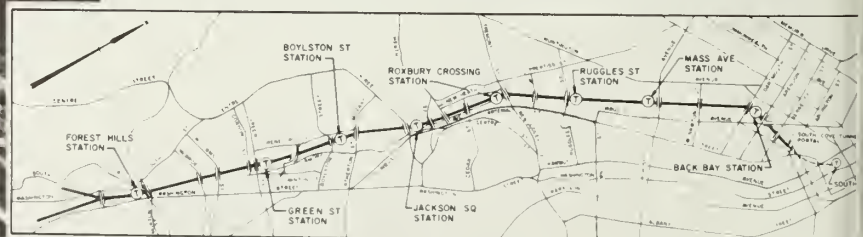
industrial, education and residential development. Eight miles long and up to four miles wide, the Corridor encompasses one quarter of the city's population and links downtown Boston with seven of its neighborhoods. The Southwest Corridor Project is being undertaken as a cooperative venture among the MBTA, the Federal Government, the Commonwealth of Massachusetts, and the City of Boston.

It is anticipated that the new Orange Line will carry more than 120,000 riders daily with an additional 20,000 riders using the Commuter Rail and Amtrak trains that share the route. Over \$600 million is being spent for transit and railroad facilities, new roads, and 23 new bridges.

The Corridor will provide work for up to 18,000 people during its five year construction period. Rehabilitation of the area served will create more than 11,000 permanent new jobs along with new housing, three new high schools, a college, and new recreational facilities.

The prime location of the Corridor with its close proximity to mass transit, highways, and a substantial labor market is already attracting new business and industry to the area. The Corridor's new \$7.6 million Crosstown Street feeds the Crosstown Industrial Park where a number of leading companies including the Digital Equipment Corporation and the Healthco Company have begun to open or plan new facilities and it is anticipated that the Park will eventually bring 1,500 jobs to Roxbury and the South End.

Over 1,000 new dwellings are now being planned on land made available by the Corridor. The \$36 million Roxbury Community College, located between the new Roxbury Crossing and Jackson Square Stations, will eventually serve 3,000 students. The 85-acre Corridor Parkland, operated by the Massachusetts Department of Environmental Management and stretching from Forest Hills to Back Bay will provide residents with recreational facilities, including tennis and basketball courts, victory gardens, children's play areas, and an eight mile bike path.



The Southwest Corridor Project's depressed right-of-way will carry an anticipated 120,000 T riders daily. The \$600 million route is slated to open in 1986. (Courtesy Raymond Kaiser Engineers.)

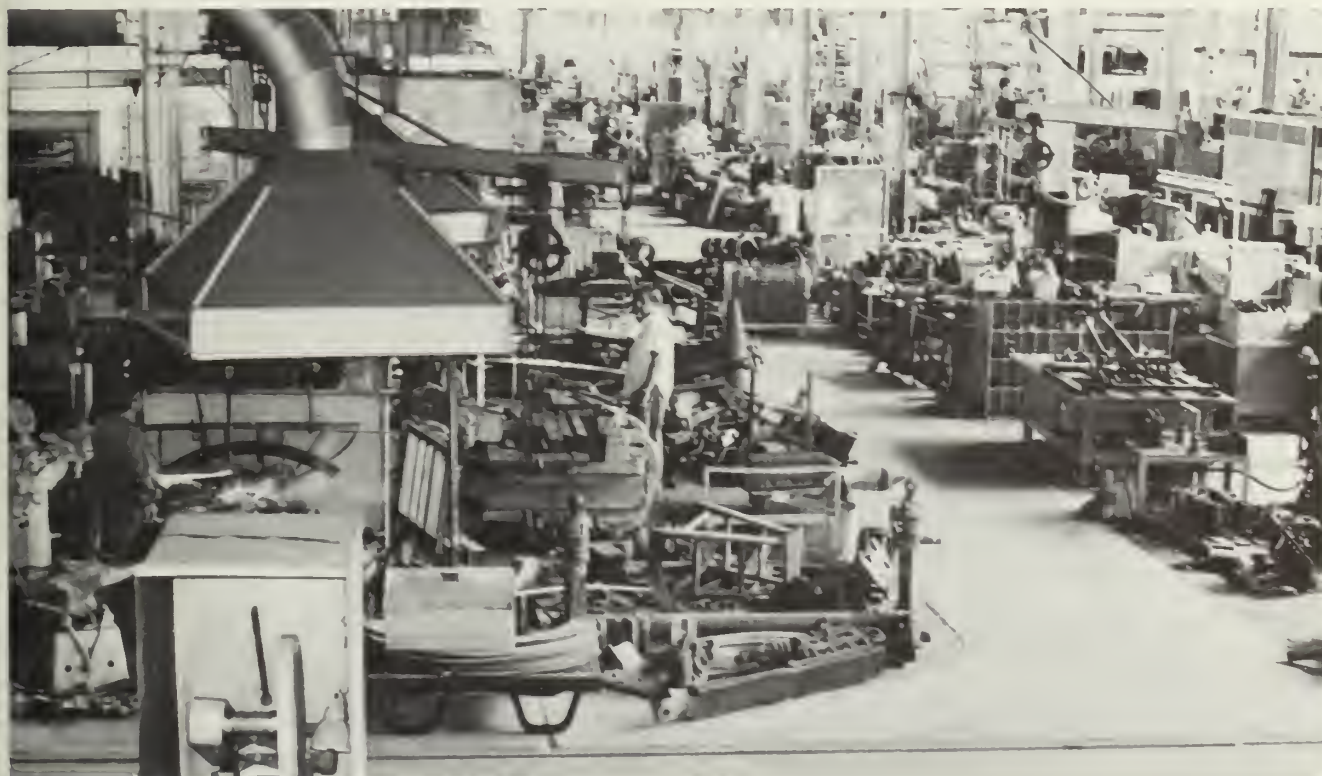
The massive rehabilitation and new development along the Corridor are projected to increase Boston's tax revenues by \$7.3 million.

Five contracts totalling \$164 million were awarded during 1982 in the three sections which make up the Corridor. Construction is within budget and on schedule, and the Authority is currently projecting Corridor service will commence during the summer of 1986.

## Systemwide Improvements

The Authority is investing \$1.5 billion in a Systemwide Improvement Program geared to modernizing T facilities, some of which date back to the turn of the century. The Program consists of seven major components including: Commuter Rail; Maintenance Facilities; Power Improvements; Rehabilitation of Facilities; Station Modernization; Track, Tunnels, and Facilities; and Vehicle Improvements and Procurements. During 1982, 23 construction contracts for these improvements were awarded totalling \$44 million. Specific 1982 activities in this area included:

- Substantial progress in the upgrading of maintenance repair and storage facilities at Everett, Charlestown, and Reservoir sites.



The Everett Shops, the Authority's main heavy repair facility, was substantially upgraded and modernized during 1982 as part of the T's \$1.5 billion Systemwide Improvement Program.

- Major improvements to Commuter Rail track structure.
- Upgrading of deteriorated tunnels and track structure throughout the existing system including contract awards of \$87,000 for sidework at the Lake Street LRV facility and \$1.3 million for tunnel repairs at the Government Center Green and Blue Line intersection.
- Station modernization including lengthened platforms, new escalators, handicapped elevators, new lighting and signage, and total interior renovation to various Red Line stations. Contracts totalling \$5.2 million were awarded for lengthening Charles, Savin Hill, and Fields Corner platforms and the modernization of Suffolk Downs Station.
- Continued work on the conversion of South Station into a major multi-modal transportation complex.



## AWARDED CONTRACTS FOR 1982

Award Date	Contract Description	Firm Name	Award Amount
03/01/82	Section II, line construction, Southwest Corridor Boston (097-216)	JV:Schiavone Construction Co. Modern Continental Constr. Co.	\$ 28,977,475.0
03/03/82	Tunnel, freight cut off to No. of Rte. 2, Cambridge/Arlington Sta 323&75 to 337&12 (091-510)	JV:White/Morrison-Knudsen/ Hergentime	13,633,920.0
04/05/82	Section I, line construction, Southwest Corridor Boston (097-120)	JV:White/Morrison-Knudsen/ Hergentime	46,686,998.0
04/05/82	Furnish & install duct & cable system for 13.8kv ac and 750 volt dc connections (066-105)	JV: Lord Electric Co., Inc. & Mass Electric Construction Co.	5,075,419.0
04/16/82	Southwest Corridor Project, Section III, line construction Boston (097-316)	Cruz Construction Co., Inc.	42,958,800.0
05/26/82	Trolley bus emergency power supply — feasibility test and demonstration (117-100)	Wm. M. Brobeck & Associates	39,995.0
06/07/82	Reservoir yard and main line signal and interlocking system (053-109)	General Railway Signal Company	2,278,068.0
06/07/82	Erect bldgs., furn. and install misc. materials for substations Metro Boston area (066-106A)	Peter Kiewit Sons' Co.	6,585,200.0
06/20/82	Emergency demolition and repair of freight facility Walpole (001-102)	James G. Grant Co., Inc.	4,146.0
06/28/82	Atlantic Avenue Sewer (015-102)	Merit Equipment Corporation	663,750.0
07/20/82	Beacon Street Platform Improvements Boston & Brookline (092-107)	D. Cicconi Inc.	248,482.0
08/05/82	Track Rehabilitation, Plymouth and West Hanover Secondary Tracks (123-102)	J.F. White Contracting Co.	2,066,700.0
08/05/82	Ventilation, Fire Protection & Mechanical Equipment, Som., Camb., & Arlington (091-561)	Perini Corporation	3,981,600.0
08/05/82	Emergency repair work, fire damage to bus overhaul shop Everett (001-104)	Peabody Construction Company, Inc.	150,000.0



08/05/82	Reservoir, Phase II, carhouse and lower yard Brookline (053-104)	J.F. White Contracting Co.	9,958,026.00
08/05/82	Remove and replace tunnel pump discharge piping system East Boston (100-114)	Gaffny Plumbing & Heating Corp.	118,000.00
08/05/82	Fields Corner and Savin Hill Stations, platform lengthening & improve. Red Line (096-109)	W.T. Rich Company, Inc. (79989)	1,359,000.00
08/27/82	Renovation of main repair shop Everett maintenance facilities Everett (087-102)	J.L. Marshall and Sons, Inc.	7,348,373.00
08/27/82	Rehabilitation operator's lobby Reservoir Yard, Boston (053-110)	Rich Construction Corp. (79991)	788,000.00
08/27/82	Renovations to Maverick Station Kiosk, Blue Line East Boston (056-107)	Joseph P. McCabe, Inc. (65050)	120,640.00
08/27/82	Building Renovations and misc. improvements, Bartlett Street Garage, Boston (100-116)	Joseph P. McCabe, Inc. (65050)	1,142,456.00
08/27/82	Suffolk Downs Station, rebuild outbound platform & sta. mod., Blue Line, Boston (094-111)	Peabody Construction Company, Inc.	2,533,675.50
09/07/82	45 High Street first floor renovations Boston (001-103)	Patrick F. Walsh & Sons, Inc.	195,000.00
09/17/82	Section II, line construction Southwest Corridor Boston (097-217)	The Modern Continental Const. Company, Inc. (67438)	10,867,480.00
09/22/82	Track improvements Lake Street Yard Boston/Newton (095-104)	D.F. Frangioso & Co. Inc.	87,399.00
10/28/82	Charles Station Platform lengthening and improvements Red Line, Boston (094-107)	Solihando Construction Co., Inc.	1,285,885.00
10/28/82	Subway tunnel rehabilitation Green/Blue Line, Government Center Area, Boston (103-101)	T Equipment Corporation	1,284,050.00
11/18/82	Southwest Corridor Project, Section III, line construction Boston (097-306)	M. DeMatteo Construction Co.	34,509,612.60
12/07/82	Construction of yard office building, Readville (083-108)	P. Leone Construction Co.	383,232.00
12/07/82	South Station Transportation Center — Phase IA Ramps Boston (105-100)	R. Zoppo Co., Inc.	614,527.75
	GRAND TOTAL		<u>\$225,946,108.85</u>

## FY '82 FUNDING

Project	Federal Share	Approved
Section 3 — Rail Modernization		
Track Improve. MA-03-0057-03	\$ 5,013,000	6/15/82
Green Line Improve. MA-03-0015-06	11,100,644	3/31/82
Commuter Rail Improve. Ph. III, MA-03-0106-01	3,483,004	4/30/82
Everett Mtce. Fac. MA-03-0043-04	5,724,000	4/27/82
Station Modern. Ph. III, MA-03-0056-03	1,968,708	5/25/82
Mod. of 88 R/T Cars MA-03-0107-02	22,500,000	7/16/82
Power Improvements MA-03-0019-08	2,876,540	8/13/82
Systemwide Sign/ Comm., MA-03-0084-02	7,100,000	6/28/82
Safety Improve. MA-03-0025-03	1,364,048	6/25/82
Commuter Rail Improve. Ph. IV, MA-03-0111-01	1,074,056	6/25/82
Transit Park-Ride MA-03-0114	796,000	8/13/82
SUBTOTAL	<u>\$63,000,000</u>	
Section 3 — Urban Initiatives		
South Station MA-03-0088-03	14,000,000	6/25/82
SUBTOTAL	<u>\$14,000,000</u>	



## FY '82 FUNDING (Continued)

Project	Federal Share	Approved
Section 3 & 5 — Bus		
Transit Efficiency MA-03-0051-03/05-0035	\$ 3,455,000	8/13/82
Plant Improve. Ph. IV, MA-03-0078-04	1,001,156	8/20/82
Plant Improve. Ph. IV, MA-05-0033	3,604,000	6/22/82
Everett Mtce. Fac. MA-03-0043-04	6,100,000	4/27/82
SUBTOTAL	<u>\$14,160,156</u>	
Section 5 — Operating		
Oper. Assistance MA-05-4077	4,018,933	12/14/81
Oper. Asst. — Ph. I MA-05-4077-01	5,491,339	1/4/82
Commuter Rail Oper. Asst., MA-05-4078	6,326,628	2/4/82
Oper. Asst. — Ph. II MA-05-4077-02	10,399,387	2/18/82
SUBTOTAL	<u>\$26,236,287</u>	
Technical Study		
Plant & Facilities Dev. Pgm, MA-09-0096	220,000	9/8/82
SUBTOTAL	<u>\$ 220,000</u>	

## FY '82 FUNDING (Continued)

Project	Federal Share	Approved
Interstate		
Harv. Sq. to Arl. Hts, MA-23-9008-05	\$ 7,999,945	12/10/81
Southwest Corridor MA-23-9007-07	114,700,054	6/18/82
Southwest Corridor MA-23-9007-08	10,000,000	9/22/82
SUBTOTAL	<u>\$132,699,999</u>	
FRA Funds		
Southwest Corridor MA-23-9007-09	36,078,000	9/30/82
SUBTOTAL	<u>\$ 36,078,000</u>	
GRAND TOTAL	<u>\$286,394,442</u>	



# MATERIALS DIRECTORATE

By exercising strict and innovative controls over the purchase of Authority materials, supplies, and equipment, the *Materials Directorate* concluded its 1982 activities with an impressive record of savings, productivity, and cost-effective operation.

## Vehicles

For the first time in the history of the Authority contracts were awarded to outside firms for the rehabilitation of MBTA vehicles, adding years of service to the vehicle's life expectancy at a fraction of the cost of purchasing new equipment. Seventy MBTA buses will be rebuilt at a cost of approximately \$45,000 each versus estimated costs of \$150,000 per vehicle for new buses. Contracts were also completed for the rebuild of 32, 25-30 year old Budd Rail Diesel Cars (R.D.C.) as modern push-pull commuter coaches adding another projected 25 years to the coach's life span. The rebuilding of the R.D.C.s cost the Authority \$435,000 for each control car and \$314,000 for trailer or "blind" cars. New commuter coaches would have cost the MBTA nearly \$1 million each.



Thirty-two 25-30 year old Budd Rail Diesel cars were rebuilt into modern push-pull commuter coaches in 1982 at a substantial savings over the cost of purchasing new equipment.

Purchases of new vehicles included the procurement of nine existing LRVs from the manufacturer at a price comparable to constructing new cars. The Materials Directorate also oversaw the delivery of 168 new Flyer buses and two work motor railcars for use on the Red and Orange Lines.

## Fuel

The MBTA uses approximately seven million gallons of fuel per year to power its bus fleet. Traditionally, the Authority has used No. 1 kerosene as its bus fuel. The Materials Directorate, through a cooperative effort with the Automotive Equipment Maintenance Department, conducted

tests which proved that, in many cases, No. 1 kerosene could be mixed with or supplanted by less expensive No. 2 diesel fuel. No. 2 fuel is now being used by several Authority garages and estimates now indicate savings in excess of \$.5 million per year will be realized.

## Supplies

Over \$.5 million in savings occurred in 1982 through first time efforts to use after market sources of equipment instead of equipment manufacturer's replacement parts.



Through the first time use of aftermarket equipment sources, Authority shops realized savings of \$.5 million over the previous purchase of original equipment manufacturer's replacement parts.

Major parts and supply procurements for 1982 included negotiating contracts for ten Red Line car trucks and related parts to improve car availability through lower down time, and the purchase of track material for the rebuilding of Commuter Rail lines.

Additional 1982 activities of note were:

- The overseeing of new contracts for watchmen and janitorial and cleaning services.
- The updating and expansion of the computerized Inventory Control System.
- The purchase of a Central Processing Unit for the update and expansion of the Authority's Data Processing and Management Information System capabilities.
- The sale of scrap materials for a total of a quarter of a million dollars.

Through the provisions of the Management Rights Act (see Appendix III), Authority stockmen were reclassified as "roving stockmen". This reclassification now enables the Materials Directorate to serve Operating Department needs by being able to assign stock personnel to garages and carhouses as needed, avoiding overtime costs and saving an estimated \$30,000-\$60,000 per year.



# TREASURER-CONTROLLER'S DEPARTMENT

The *Treasurer-Controller's Department* initiated innovative financing techniques during 1982 to reduce MBTA capital costs and interest. The Authority issued \$68.2 million in long term bonds on April 1, 1982. This issuance included the first time use by a major tax-exempt organization of "Zero Coupon" bonds. These "Zero Coupon" bonds will allow the MBTA to save approximately \$6.9 million over the life of the issue through reduced interest payments.

In July, 1982 the Department issued \$70 million of one year notes at an interest savings of approximately \$1 million. These savings resulted through the use of the Municipal Bond Insurance Association (MBIA). The MBIA is an insurance program that acts as a credit enhancement to upgrade the Authority's credit rating thereby reducing interest costs.

A "Safe Harbor" lease transaction was negotiated in December by the Treasurer-Controller's Department involving the new Orange Line cars, new buses, and the rebuilt Commuter Rail coaches. "Safe Harbor" leasing is a sale of tax benefits to a third party. The transaction netted the Authority over \$1.2 million.

This Department made a number of improvements in its administrative activities during the year, including:

- The reorganization of the Internal Audit Section, upgrading effectiveness of both capital and operating audits.
- The development of a comprehensive risk management policy.
- The review and upgrading of Accounts Payable procedures.
- The beginning of the modernization of the MBTA payroll system.
- The implementation of a newly developed cash management system which will result in increased MBTA investment earnings.

## PERSONNEL DIRECTORATE

### Labor Relations Section

In 1982 the *Labor Relations Section* worked to implement provisions of Chapter 581 of the Acts of 1980, commonly known as the Management Rights Act (Appendix III). Changes in antiquated and inefficient work rules, made possible under the Act and implemented by Authority management under the advice and guidance of this Section, contributed to the Authority's cumulative savings of \$59 million realized since implementation of the Act.

Two years of ongoing negotiations with the Carmen's Union led to a binding arbitration settlement being handed down by arbitrator James J. Healy on January 18, 1983. For the first time in MBTA history an arbitrator was guided by the recently passed Reform Arbitration Law. That law mandates that an arbitrator must consider the ability of the Authority and its member communities to meet additional costs and the rates of comparable Commonwealth public employees. The arbitrator's actions affirmed the many steps the Authority has taken under the Management Rights provisions. The decision also supported steps taken by MBTA management to eliminate longstanding inefficient work practices. Among the inefficient past practices eliminated were those setting the numbers of employees that must be used for particular job assignments, and practices prohibiting the MBTA from assigning employees to work in the most productive manner.

A structured wage increase was included in the Healy decision as follows:

Agreement:	
1981:	0
Effective January 1, 1982:	5%
Effective April 1, 1983:	4%
Effective January 1, 1984:	4%
Effective July 1, 1984:	4%
Effective January 1, 1985:	2%

The arbitrator's award will undoubtedly provide a long sought element of stability in the Authority's labor/management relationship. Application of the arbitrator's terms to Authority collective bargaining with the MBTA's 28 other unions will be used to balance the legitimate needs of employees with budgetary constraints and management prerogatives.

In addition to the above, Labor Relations also:

- Conducted ongoing productivity meetings with organized labor representatives to establish productivity and conduct standards pursuant to Management Rights mandates.
- Commenced negotiations for a new Pension Agreement replacing an agreement that expired in June of 1982. Management's priority is to tailor terms for the new agreement to provide adequately for employees while remaining within prescribed budgetary limitations.

## **Personnel Services Section**

During 1982, this Section implemented a totally revised Management Productivity Training Program. The focus of the Program is designed to help managers make employees more responsible for their own activities improving organizational, departmental, and individual productivity and achieving the goal of making the organization more effective. Some units covered in the Program include Understanding Motivation, Managing Morale, Managing by Objectives, and Goal Setting and Feedback. So far, some 25 T managers have received instruction.

1982 also saw:

- The design and conducting of a lottery system for selection of part-time bus operators.
- The formation of testing and interview procedures for the selection of qualified Third-Class Machinists.
- The redesign of job-related standards for testing and interviewing applicants for Extra Starter, Inspector and Dispatcher.
- The completion of contract negotiations for the 1983 installation of a Personnel Management Information System.

## **Employment, Workers Compensation and Medical Services Section**

Due to direct efforts on the part of this Section to reduce employee benefit claims, claims incidences have dropped for the first time since 1979. One such effort was the education of supervisory personnel, through the Management Productivity Training Program and through basic Supervisor Job Orientation, regarding compensation costs, employee attitudes and problems, and other cost-saving alternatives that may be pursued.

Other 1982 highlights of this Section include:

- The administration of 642 hirings including 227 part-time operators.
- The establishment of hiring eligibility lists based on competitive written examinations for various job classifications.





The Personnel Directorate oversaw 642 1982 hirings including 227 part-timers.

## Employee Services Section

Some Authority employees and their families, just as in any large company, are bothered by problems with alcohol, drugs, or behavior. In its continuing efforts to assist these individuals and families, 115 new clients were enrolled in Employee Services Programs. The Program places emphasis on early problem intervention and on the constant education of employees, supervisors, and union officers that help is available through this Section.

## MANAGEMENT INFORMATION SYSTEMS DIRECTORATE

The MBTA, with its vast scope of services, requires rapid access to accurate information to maintain proper controls over the system's daily planning, management, and direction. As a need for a state-of-the-art informational support system became apparent, the MBTA Board of Directors created the *Management Information Systems (MIS) Directorate* in 1982.

The introduction of the MIS Directorate was an important prerequisite to the establishment of an information resource that would transcend independent department level data systems of the past. In its place, MIS is creating an Authority-wide system for exchanges of information, with a standard framework and format for data having impacts on organization, staff patterns and skill levels, and work rules.

During 1982, MIS instituted several major system development projects:

- An information system was developed to provide support to the Operations Directorate. This system will produce timely data storage retrieval and analysis charting individual vehicle histories; scheduling and preventive maintenance of vehicles, rights-of-way and structures; and identify specific physical problem areas associated with vehicles and buildings. Service planning and transportation schedules will also be analyzed through this system.

- The groundwork was laid for the transition from a manual to an automated recording system for automotive equipment maintenance information. A similar Automated Rail Maintenance System will service portions of the Rapid Transit Lines in 1983. National reports indicate up to 7% return on investment is possible through timely, reliable vehicle maintenance data and resultant corrective action.
- The design phase for the automated Personnel Management Information System (PMIS), scheduled for implementation in 1983, commenced in 1982. The PMIS will record and track personnel data from the time of an individual's application. Job placement, medical data, salary history, skills, grievance data, and other individual personnel data will be reported on by the PMIS.

As the result of efforts made by this Directorate to secure capital grant funds from UMTA specifically for improvements in the MIS area, federal grants increased by \$1 million in 1982 with an additional \$8 million expected over the next two years.

To ensure that strategic MIS plans are in accordance with Authority operating goals and management objectives an MIS Executive Steering Committee has been formed consisting of a member of the Board of Directors, a representative from the General Manager's Office, the Budget Director, Operations Directorate, Treasurer-Controller, and the MIS Director. The Steering Committee has been and will be continually involved in setting specific priorities for MIS over the coming year.



The Management Information Systems Directorate was created in 1982 to fill the Authority's need for state-of-the-art informational support systems.



# POLICE DEPARTMENT

In 1982, for the first time in ten years, the Authority increased the size of its police force by authorizing the hiring of 14 new officers.

The increased size of the police force showed direct results:

- Apprehensions for offenses committed on the MBTA during 1982 rose 44%.
- Serious crimes, including murder, rape, robbery, aggravated assault, burglary, larceny, and vehicle theft, dropped 23%.
- Robberies on the system dropped 26%.
- Pickpocket offenses were reduced by 36%.

During the year, the Department went on line with the new Law Enforcement Agency Processing System (LEAPS) — a computerized terminal providing access to local and national law enforcement agencies via a nationwide teletype system. LEAPS provides instantaneous inquiry response regarding wanted persons, stolen vehicles, and property.

Other major 1982 achievements included:

- Implementation of "Operation Rainbow II" — a program utilizing two women officers as decoys for criminals. 158 criminals were apprehended in 1982 by those undercover teams.
- Completion of the first phase of the underground radio system allowing officers assigned to the Orange Line tunnel to maintain radio contact with the dispatcher improving response calls for service.
- Increased activity by the Community Relations Officer in presenting crime prevention and education seminars to business, civic, and school groups.



Two motorcycles were added to the T Police vehicle fleet to help increase the flexibility and mobility of the force.

# DEPARTMENT OF REAL ESTATE MANAGEMENT

The *Department of Real Estate Management* is a major force in the Authority's continuing efforts to reduce costs through increased revenues and savings. In 1982, the Department, operating at an annual budget of \$110,000, was responsible for record revenues and savings to the Authority of \$4.15 million. A rebid of parking facilities alone resulted in a net savings to the Authority of \$400,000, while, at the same time, resulting in more secure and better maintained parking facilities.

A major step forward was taken in 1982 as Real Estate Management, for the first time in MBTA history, initiated Joint Development Procedures for the lease of air rights for retail and commercial space at a number of Authority landholdings. This process will bring the MBTA millions of dollars in leasing fees and rider-generated revenue. In addition, city planners foresee new jobs and taxes while developers are discovering new access to land areas from which they were previously excluded.

Other 1982 achievements included:

- The sale of Lincoln Power Station, Brockton Garage, and Somerville Garage which will realize \$1.27 million.
- The revision of appraisal and bidding procedures.



The sale of the out-of-service Lincoln Power Station (pictured above), the Brockton Garage and the Somerville Garage will realize \$1.27 million for the Authority.



Improvements in security and maintenance of Authority parking facilities were benefits that resulted from a 1982 parking lot rebid.



# LAW DEPARTMENT

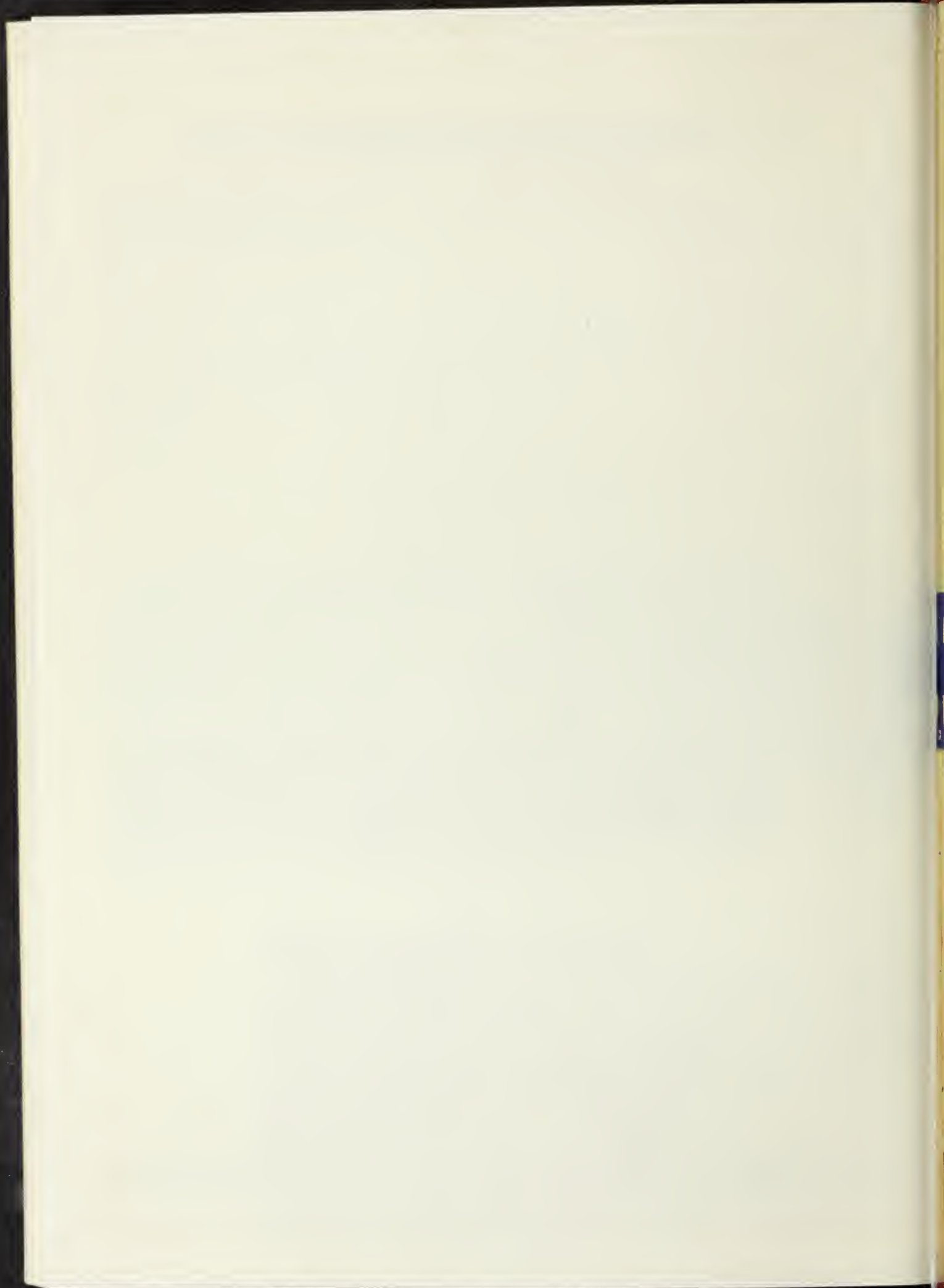
The *Law Department's* major 1982 achievement was the successful defense of the Management Rights Act (Appendix III) against a number of court challenges seeking to overturn provisions of the new law. As a result of a number of court decisions affirming Management Rights, the MBTA was able to proceed with the institution of efficient, productive, and cost-saving changes in Authority work rules and procedures.

Some of the major court decisions handed down in the Authority's favor during 1982 were:

- A U.S. Supreme Court decision to decline to hear the appeal by two unions challenging the validity of the 1978 Reform Arbitration Law\* and the 1980 Management Rights Law.
- The State Court denial of a Boston Carmen's Union Local 589 request for declaration that the MBTA could not implement Management Rights until a new contract for the union was in effect.
- A State Court refusal to prohibit the hiring of part-time employees and to order the MBTA to arbitrate a grievance filed over the hiring of part-timers.
- State Court prohibitions of job actions over the hiring of part-timers.
- The failure of challenges to the MBTA management's rights to:
  - Assign, appoint, and employ its working force.
  - Restrict the continued movement of employees from one position to another ("job hopping") necessitating costly procedures to fill the original job.
  - Set up new job classifications.
  - Change schedules and working hours.
  - Determine which bargaining unit should perform which work.
  - Subcontract work.

During 1982, the number of claims made and settled and the resulting cost of the settlements dropped for the fifth consecutive year. However, law suits against the Authority climbed from 552 in 1981 to 599 in 1982 and the cost of settling these suits rose substantially. The MBTA has been exempted from a law capping tort liability for the Commonwealth and its agencies at \$100,000. The Authority has introduced legislation for 1983 to place the MBTA under this \$100,000 limit.

\* The Reform Arbitration Law of 1978 mandates that when arbitrating union contracts an arbitrator must consider both the ability of the Authority and its member communities to meet additional costs as well as the wage rates of comparable Commonwealth employees.





# **3 COMPREHENSIVE PROGRAM FOR MASS TRANSPORTATION**





# COMPREHENSIVE PROGRAM FOR MASS TRANSPORTATION

The MBTA must comply with planning and programming requirements established by State and Federal Law.

At the state level, the Executive Office of Transportation and Construction (EOTC) is responsible for the Comprehensive Program for Mass Transportation in accordance with Chapter 161A, Section 5 (g) and (h) of the General Laws of the Commonwealth; as amended by Section 7 of Chapter 1140, Acts of 1973.

The statute states that the Authority's capital investment program and plans for mass transportation "shall be developed in consultation and cooperation with the Authority, and in consultation with the Executive Office of Communities and Development, the Metropolitan Area Planning Council, and such other agencies of the Commonwealth or the Federal Government as may be concerned with said program and plans." The program and any revisions are subject to the approval of the Advisory Board.

The program must include a long-range plan for the construction, reconstruction, or alteration of mass transportation facilities within the Authority's district; a schedule for the implementation of the program; and comprehensive financial estimates of cost and revenues.

The current Program for Mass Transportation remains that approved by the Advisory Board on December 21, 1978.

To comply with Federal Requirements, the MBTA, as one of the six agencies constituting the Metropolitan Planning Organization (MPO), cooperated with those other agencies in the preparation of several required certification documents: the Unified Planning Work Program, the Transportation Plan, and the Transportation Improvement Program. All of these documents were revised and approved by the MPO during 1982.

## LEGISLATION

With the Board of Director's approval, the following proposals were filed for consideration during the 1982 Session of the General Court:

1. AN ACT relative to motor vehicles impeding the operation of the Massachusetts Bay Transportation Authority.

This legislation would allow the MBTA police to tag and tow motor vehicles impeding Authority operations both on and off Authority property. Fines under this legislation would be paid to the Authority for violations on Authority property. Fines for violations off Authority property would be paid to the locality wherein the violation occurred.

2. AN ACT relative to the granting of certain interests in land under Boston Common by the City of Boston to the Massachusetts Bay Transportation Authority in order to extend the subway platforms at Park Street Station.

(Article 97 of the Amendments to the Constitution requires legislation to transfer any interest in parkland from one governmental agency to another.)

3. AN ACT authorizing and directing the City of Boston, through its Parks and Recreation Commission, to convey to the Massachusetts Bay Transportation Authority, certain interests in parcels of land in the City of Boston for the purpose of constructing certain portions of the Massachusetts Bay Transportation Authority's Southwest Corridor Project.

This legislation contains parcels of parkland owned by the City of Boston and required for the Southwest Corridor Project.

4. AN ACT relative to the hiring for certain positions by the Massachusetts Bay Transportation Authority.

This legislation would prohibit the Authority from hiring certain persons as operators, collectors or guards and would allow the Massachusetts Bay Transportation Authority to receive criminal offender information (criminal records).

5. AN ACT establishing a claims and indemnity procedure for the Massachusetts Bay Transportation Authority and the officers and employees thereof.

This proposal would impose a one hundred thousand dollar limit on certain claims against the Massachusetts Bay Transportation Authority. This same limitation is now applicable to the Commonwealth and cities and towns under legislation enacted in 1978.

6. AN ACT relative to income tax credits for employees providing all or part of certain expenses for public transportation.

This proposal would authorize a tax credit for an employee who subsidizes in whole or part prepaid transit passes or commuter rail tickets. The bill provides for a 50% credit.

7. AN ACT relative to the transfer of all vehicular bridges carrying public ways over tracks or rights-of-way of railroads within the Commonwealth.

This proposal provides that the Massachusetts Department of Public Works take over the care and ownership of vehicular bridges now owned by the Massachusetts Bay Transportation Authority. Current law enables the D.P.W. to take over care and control of railroad bridges.

8. AN ACT regulating smoking in public conveyances and facilities of the Massachusetts Bay Transportation Authority.

This legislation would allow MBTA police to issue tickets to those smoking on Authority vehicles and premises where such smoking is prohibited. It provides for a \$25.00 fine.

9. AN ACT authorizing the State Treasurer to borrow money to make payments to the Massachusetts Bay Transportation Authority.

This legislation authorizes the State Treasurer to issue notes up to the amount of the Authority's estimated net cost of service for 1982 and to use the proceeds of such notes to make payments to the Massachusetts Bay Transportation Authority in accordance with existing law.

10. AN ACT relative to public ways over tracks or rights-of-way of railroads within the Commonwealth.

This would relieve the Massachusetts Bay Transportation Authority from flagging costs when the D.P.W. is working on bridges that pass over MBTA commuter rail rights-of-way.

11. AN ACT amending the law relative to the use and occupation of certain land in the City of Cambridge by the Massachusetts Bay Transportation Authority.

This proposal would extend occupancy of a certain parcel of land at Bennet Street by the Massachusetts Bay Transportation Authority.

12. AN ACT relative to the payment of fuel and special fuels excises by the Massachusetts Bay Transportation Authority.

This legislation seeks an exemption from the payment of excises for fuel and special fuels consumed in the operation of MBTA vehicles. Under current law the Massachusetts Bay Transportation Authority pays such excises and is reimbursed about 80% of the amount paid. This legislation seeks to eliminate payment and the procedures required for reimbursement.

13. AN ACT relative to the Massachusetts Bay Transportation Authority operating as an electric utility.

This legislation would classify the Massachusetts Bay Transportation Authority as a public utility in order to purchase power from MMWEC (Massachusetts Municipal Wholesale Electric Company) and to obtain wheeling rights from Boston Edison and other NE Pool Utilities.



## 1982 Legislation

The following laws affecting the Authority were enacted during the 1982 Session of the General Court:

- Chapter 191: General Appropriations Act containing items for contract assistance to the MBTA.
- Chapter 310: An Act authorizing and directing the Metropolitan District Commission to convey to the Massachusetts Bay Transportation Authority certain parcels of land in the City of Boston for construction of the Southwest Corridor.
- Chapter 335: An Act providing for an accelerated highway, bridge and economic development program for the Commonwealth.  
This Act was amended to provide reimbursement for certain MBTA communities allegedly not receiving service. The total amount of reimbursement was \$4,000,000, all of which was to come out of the Local Aid Fund.
- Chapter 413: An Act relative to the issuance of refunding bonds by the Boston Metropolitan District.
- Chapter 547: An Act relative to the Massachusetts Bay Transportation Authority to reduce system fares for senior citizens.

## 1982 Resolves

- Chapter 1 : Resolve directing the Massachusetts Bay Transportation Authority to make an investigation and study relative to allowing passengers to take bicycles on facilities of said Authority during certain hours.
- Chapter 10 : Resolve providing for an investigation and study by the Department of Public Utilities relative to the problems of vibration along a certain portion of the roadbed of the Boston and Maine Railroad in the City of Medford.

## THE PUBLIC TRANSPORTATION DEFICIT: A BRIEF HISTORY

Since July 1, 1918, public policy in Massachusetts has incorporated the belief that the transportation network in Greater Boston is a public service, benefitting individuals, businesses and government. That policy was first implemented when five public trustees began operating the Boston Elevated Railway (BERY) under the lease conditions of the Public Control Act passed by Legislature on May 22, 1918.

The BERY was originally a privately owned company incorporated in 1894 to construct the Tremont Street Subway. By 1897, the BERY was operating almost the entire Boston transit system. Within a few years, the BERY had become beset by financial problems and in 1912 the company reported its first deficit: \$492,000. Again, in 1913, the company reported a deficit of \$496,000. Small surpluses were realized over the next three years but in 1917, a loss of \$118,000 was recorded. In the first half of 1918, losses amounted to \$572,000. That year, the Legislature passed the Public Control Act placing the BERY under public control. Deficit for the first 12 months of the public takeover escalated to \$3.1 million primarily due to maintenance that had been deferred pending passage of the Act.

In 55 of the 63 years since the 1918 Public Control Act, public transportation has incurred a deficit. The eight years of surplus were 1922, 1923, 1925, 1927, 1928, 1929, 1942 and 1943. The surplus was never more than \$1.9 million. The Metropolitan Transit Authority (MTA), comprising 14 cities and towns, ran the system from 1948 through August 3, 1964. It had deficits, ranging from \$2.8 million to

\$21 million, assessable on the communities. The Massachusetts Bay Transportation Authority (MBTA), comprising 79 cities and towns, is the successor to the MTA. Its net cost of service is apportioned between the 79 member communities and the rest of the Commonwealth.

Rising operating expenses, especially wage and fuel costs, are directly attributable to inflation. The spiraling costs continue to far outdistance revenue from fares paid by increased numbers of passengers.

The sources of funding for public transit, passenger revenue, local taxation, and state aid were expanded to include the Federal Government with the passage of the Urban Mass Transportation Act of 1974 as amended by the Surface Transportation Assistance Act of 1978 and the most recent Federal Public Transportation Act of 1982. These Acts enable the Authority to become eligible for assistance in both the funding of the systemwide operation and Commuter Rail. For the year ending December 31, 1982, the Authority received \$23,199,913 in Federal Operating Grants.

## WHERE THE RIDERS ARE

Revenue from transportation — the rider's fare — pays for about one-fourth of the operating costs of the Massachusetts Bay Transportation Authority.

The tables below show the revenue from the various types of transportation the MBTA operates on the surface and on rails. Revenue to Railroad Operations is not included in the (T) total Transportation Revenues because this (T) service is operated by the Boston & Maine Corporation and these revenues are included as a reduction in the Railroad contract costs. The streetcar and bus revenue figures from each "rating station" — the garage where bus and streetcar operators pick their route on the basis of their seniority rating — give a further breakdown of where people use public transportation.

### 1982 Revenue From Transportation

#### Rapid Transit

Orange Line (Oak Grove-Forest Hills)	\$14,872,715
Blue Line (Bowdoin-Wonderland)	3,293,678
Red Line (Harvard/Brattle-Ashmont)	14,329,550
Red Line (South Shore Extension to Braintree)	5,880,455
Green Line Central Subway (Kenmore-Lechmere)	13,087,856
Total Rapid Transit Lines	\$51,464,254

#### Surface Lines

Streetcar (Green Line: Riverside, Beacon, Arborway Commonwealth, Mattapan-Ashmont)	7,153,676
Trackless Trolley (Cambridge, Belmont, Watertown)	876,397
Bus (172 Routes)	32,991,965
Total Surface Lines	\$41,022,238

#### Miscellaneous

Student Pass Sales	780,883
Chartered Bus	5,787
Total Miscellaneous	\$ 786,670

TOTAL TRANSPORTATION REVENUE	\$93,272,962
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Streetcar Revenue by Rating Stations	
Reservoir-Riverside	\$6,226,847
Arborway-Mattapan	926,829
<b>TOTAL STREETCAR REVENUE</b>	<b>\$7,153,676</b>

Bus Revenue by Rating Stations	
Cabot-Albany, Boston	\$11,342,063
Arborway, Boston	5,427,265
Somerville and Arlington Heights	2,228,825
Salem Street, Medford Charlestown, Eagle Street, East Boston	8,429,284
Lynn	2,975,990
Quincy	2,588,538
<b>TOTAL BUS REVENUE</b>	<b>\$32,991,965</b>

## MBTA ASSESSMENT PROCEDURES

A question frequently heard from our customers is "how is my town's MBTA assessment determined?" All 79 cities and towns in the MBTA district pay a share of the MBTA's yearly deficit or net cost of service. The assessment formulas for sharing the deficit were originally spelled out in state legislation passed in 1964 when the old MTA district, serving 14 cities and towns, was enlarged to the present regional transportation district and renamed the MBTA. The formulas have been amended by the legislature from time to time in an effort to make the assessment more fair and equitable.

The legislation defines two basic types of MBTA service, "express service" and "local service". Express service refers to rapid transit service on controlled rights-of-way, while local service refers to MBTA buses, trackless trolleys and streetcars in local streets. The net cost of providing each of these types of service is calculated separately and allocated by a different formula.

Type of Service	Portion of Deficit	Who Pays	Basis of Assessment
EXPRESS	75%	all cities & towns	number of commuters (1970 U.S. Census)
	25%	cities & towns with rapid transit & R.R.	boarding counts (except new stations)
LOCAL	50%	65 cities & towns 14 cities & towns	population (1980 preliminary U.S. Census)
	50%	cities & towns with bus service	share of losses sustained locally

### Express Service

Legislation has divided the assessment for the cost of express service into two parts, a 75% portion, and a 25% portion each distributed in a different fashion.

The 75% portion of the net cost of express service is shared by all 79 cities and towns in the MBTA, based on the number of "commuters" living in each municipality. The number of commuters in each city and town was determined from the 1970 Federal Census data and included all people who traveled outside their town to their place of work, whether they used public transportation or not. In the case of the City of Boston, the number of commuters was established so that Boston would be responsible for not less than 30% of this 75% portion.

The remaining 25% of the net cost of express service is shared only by those cities and towns that have one or more express service stations. This part of the assessment is proportional to the number of passengers boarding the rapid transit and railroad lines at stations in each community. By law counts are taken to determine the number of passengers boarding at each station and within each town, and in no event less frequently than every two years. However, in 1973, the legislature amended the assessment procedure to exclude from the boarding counts passengers boarding at new rapid transit stations opened after July, 1973. This amendment means that a new station in a community will not result in an increase in its assessment for the 25% portion of express service costs.

## Local Service

Local service refers to buses, trackless trolleys, and streetcars operating on local streets. As in express service, the formula for assigning the local service deficit is divided into two parts, in this case two equal or 50% portions. Half of the local service deficit is allocated on the basis of population as determined by the most recent Federal Census (1980); but on the weight of 14 Cities and Towns and 65 Cities and Towns independently. The other 50% of the deficit from local service operations is shared by those cities and towns that have such service, and is based on the proportion of losses incurred in each city or town.

To determine the operating loss incurred in each community, costs are first identified with a mode of service — bus, trackless trolley and streetcar. All direct costs are identified directly with the appropriate mode, and indirect costs are allocated to modes largely based upon the direct charges to each mode each month. Costs by mode are then allocated to specific routes by means of one of six bases depending upon the type of expense involved. Direct costs of operations and maintenance of each rating station (depot), are allocated only to routes emanating from the rating station. For example, costs of operating and maintaining routes from the Quincy Garage are allocated only to the routes in the Quincy Rating Station.

Farebox revenue is sampled on each route four times yearly, and the difference between operating cost and annual revenue determines the yearly profit or loss for each route. This profit or loss is allocated to each city or town on the route. If a town elects to have no local service, buses then make no stops in that town, and the profit or loss from routes passing through that town is distributed among the other towns on the route. For all cities and towns with local MBTA service, the losses and profits from the routes in the community are totaled. Half of the MBTA's local service assessment is then based on the percentage of local service operating losses incurred in each municipality.

As an example of local service assessment, consider a six-mile long bus route, with four miles in Town A and two miles in Town B. Assume that the operating cost for the route was \$100,000 a year. Assume also that farebox revenue on the route was \$40,000 a year. The operating deficit would be \$60,000 a year, the difference between operating cost and revenue. Half of this \$60,000 deficit (\$30,000) would be allocated among the 14 Cities and Towns and the 65 Cities and Towns on the basis of population, and half would be allocated to Towns A and B. Town A would have to pay \$20,000 and Town B would be assessed \$10,000 because the bus route operated twice as many miles in Town A as in Town B.

## Objectives

The MBTA assessment procedures can be summed up by pointing out two objectives in the formulas. The first objective is to recognize that the cities and towns of the MBTA District comprise one regional transportation district, that all municipalities benefit by the system, and, therefore, all must share some of the deficit. The second objective is to assess properly that portion of the assessment to those cities and towns that are receiving a greater degree of service. To relieve the burden on local government, the State began, in 1973, to pay for part of the MBTA deficit. This state portion has increased because of the passage of Proposition 2½. The federal government is also providing operating subsidies for mass transit under legislation enacted in 1974, as amended.





# CHARTS AND STATISTICS

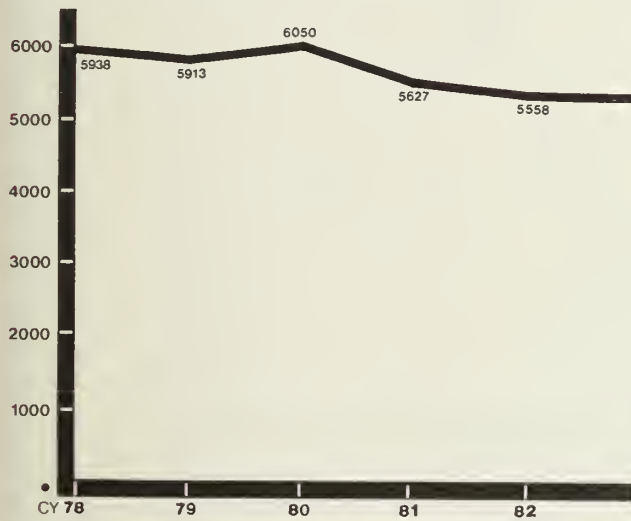




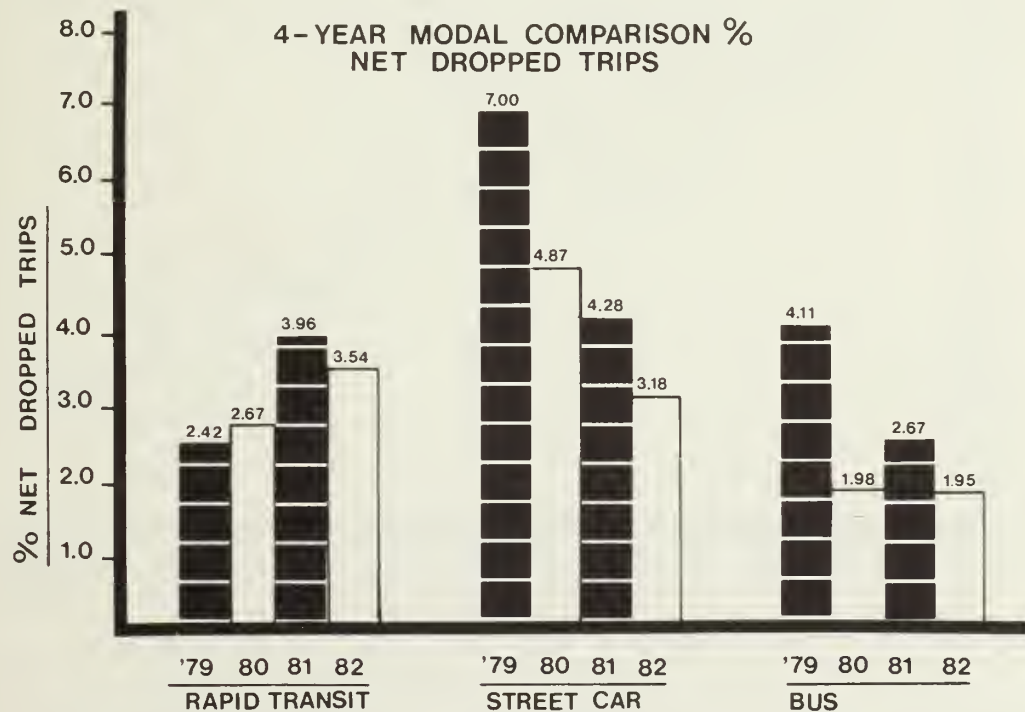
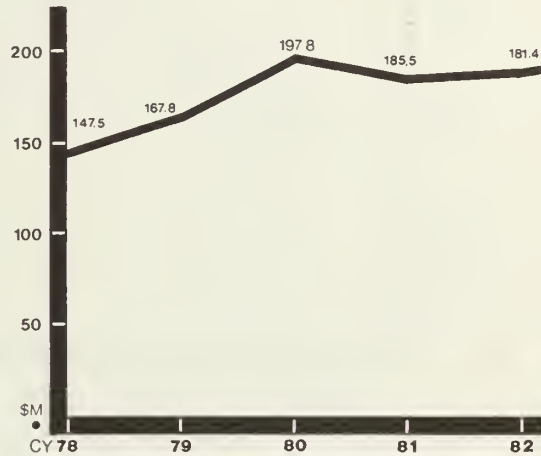
# CHARTS AND STATISTICS

The following section contains a graphic representation of some of the achievements of the MBTA in 1982.

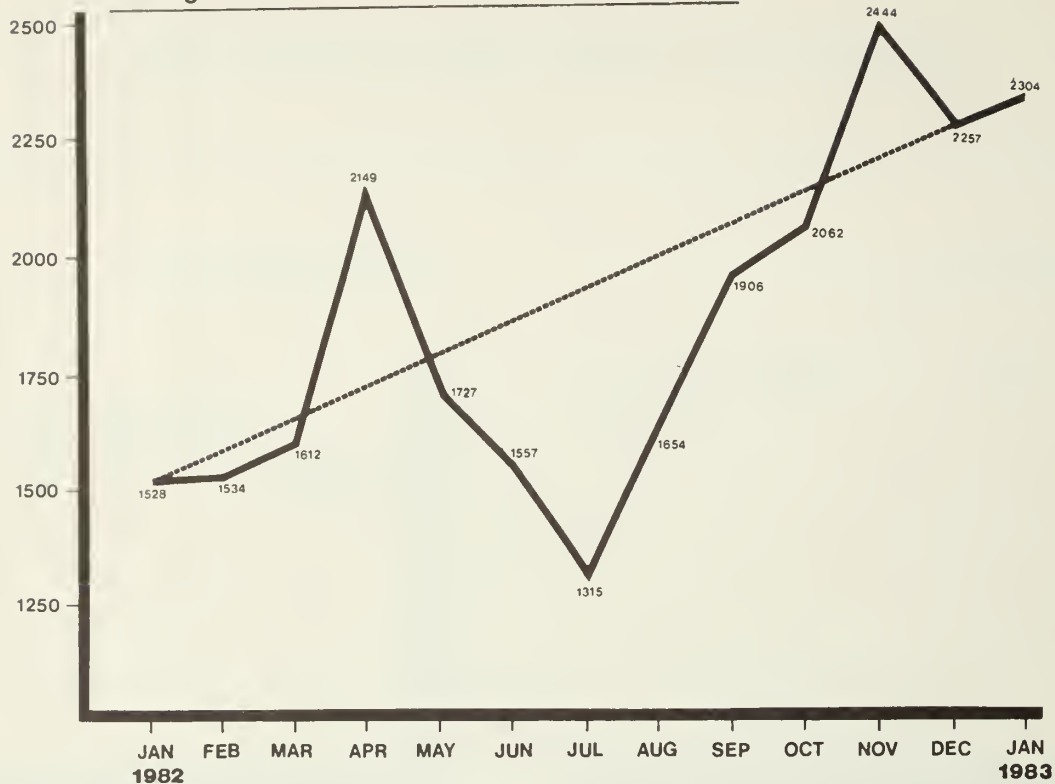
**MANPOWER (OPERATING)**



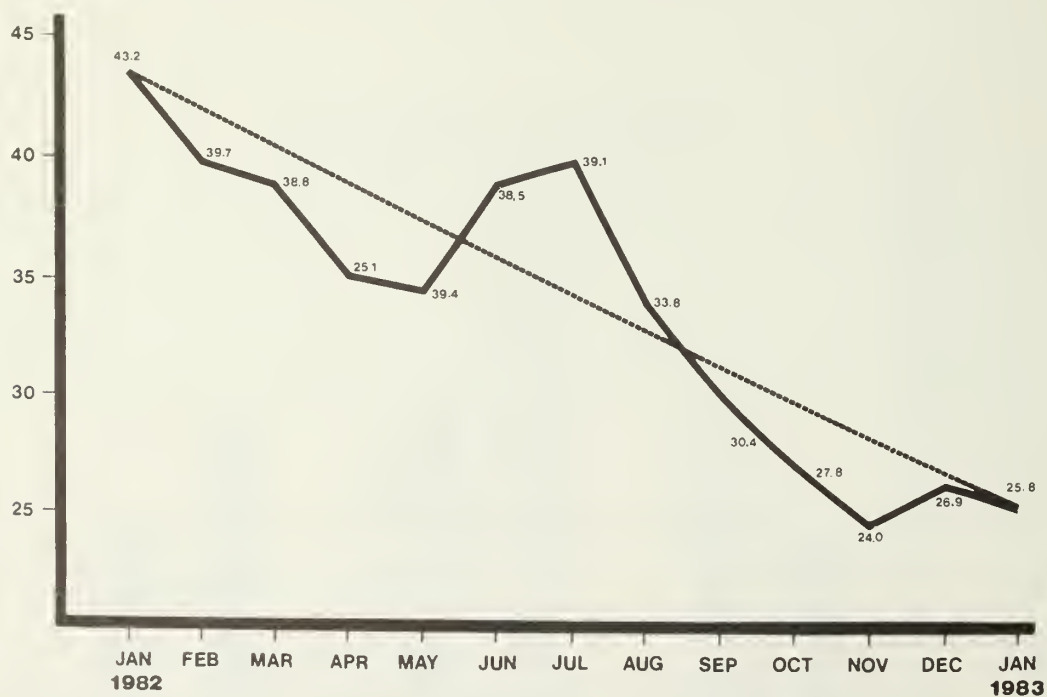
**NET COST OF SERVICE / LOSS**



Average Miles Between Breakdowns / Automotive

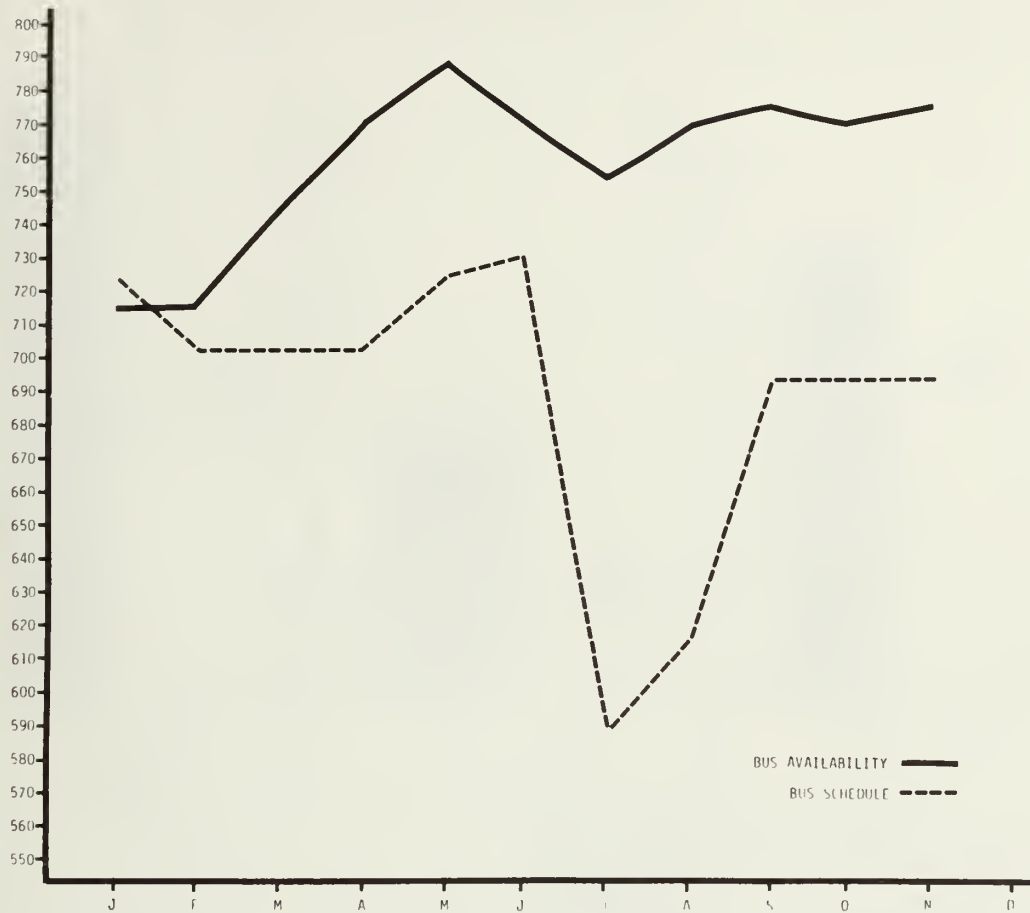


Average Number of Breakdowns Per Day / Automotive





## 1982 BUS SCHEDULE / BUS AVAILABILITY



## Revenue Miles\*/Operator

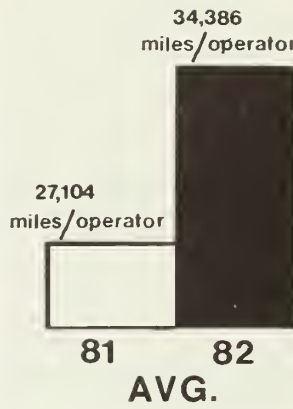
### Authority Wide

An increase of 3,564 revenue miles (20.3%) over 1981.



### Rapid Transit Vehicles

An increase of 7,282 revenue miles (26.9%) over 1981.



### Surface Vehicles

An increase of 1,952 revenue miles (12.5%) over 1981.



\* 1982 revenue miles are estimates based on actual mileage for first 6 months of year. Number of operators is 1 as of 12/31 for that year.

### Scheduled Vehicle Revenue Mile/Employee

An increase of 178 miles (2.53%).



### Operating Expenses & Taxes/ Scheduled Revenue Miles

A decrease of 18¢ (2.13%).



### Labor Cost/Scheduled Revenue Miles<sup>1</sup>

A decrease of 4¢ (1.08%).



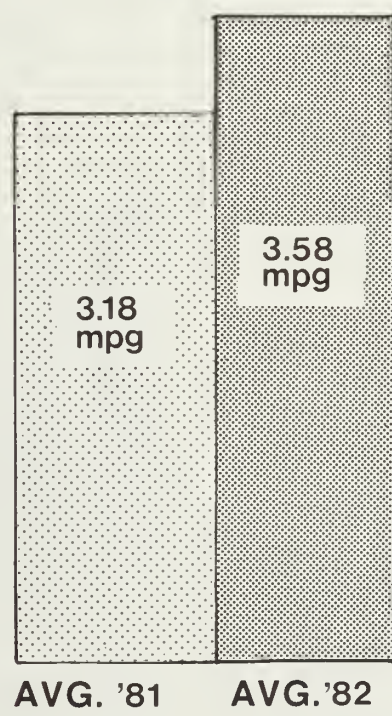
<sup>1</sup>Labor Cost includes estimate of 589 arbitration award.

## Average Weekday System Passenger Volume (One-Way Trips)

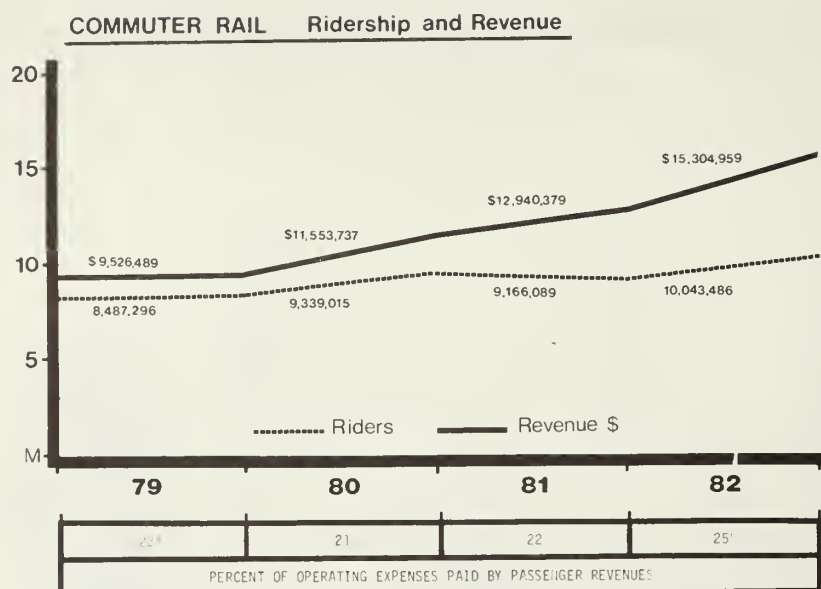
	1981	1982	Increase
October	506,900	517,800	2%
November	511,000	530,300	4%
December	499,400	518,800	4%

### REVENUE MILES PER GAL. BUS FLEET

A 12.6 % INCREASE IN MPG from 1981 to 1982







## State and Federal Assistance

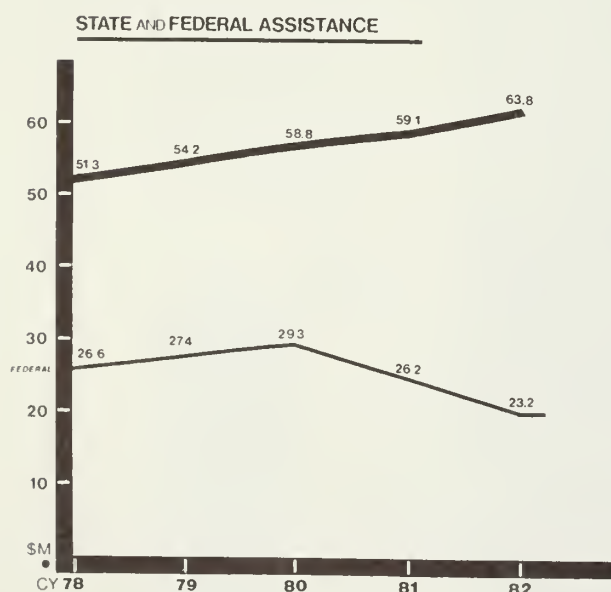
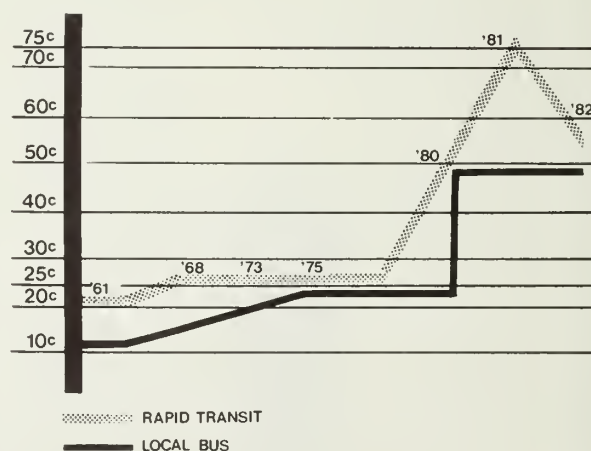


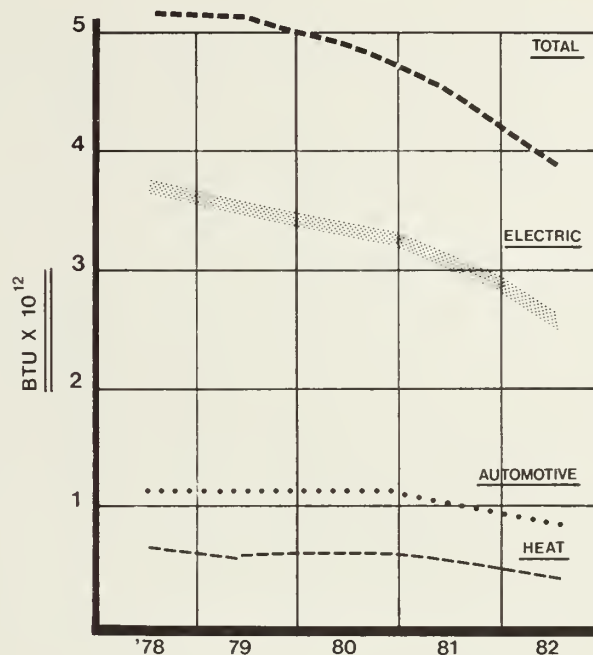
Chart does not include state contract assistance — railroad.

## Fare Structure 1961 — 1982 (Rapid Transit & Local Bus)



Note: Chart does not reflect special reductions for children, elderly, handicapped, or monthly pass holders.

## MBTA Energy Consumption (Excludes Commuter Rail)



## The Ride

(Specialized para-transit door-to-door service for the handicapped)

### Communities Served 1977-1982

Brookline

Cambridge

Boston: Allston, Brighton,  
Beacon Hill, Fenway,  
Kenmore, East Boston,  
South End, North End,  
Downtown, Mission Hill,  
Roxbury Crossing,  
Charlestown, South  
Boston, (East of the  
Central Artery)

### Square Mileage Covered

35.5

### Proposed Expansion 1983

Dorchester\*

Mattapan\*

Winthrop

Chelsea

Somerville

Everett

Watertown

Roslindale

Jamaica Plain

West Roxbury

Arlington (30%)

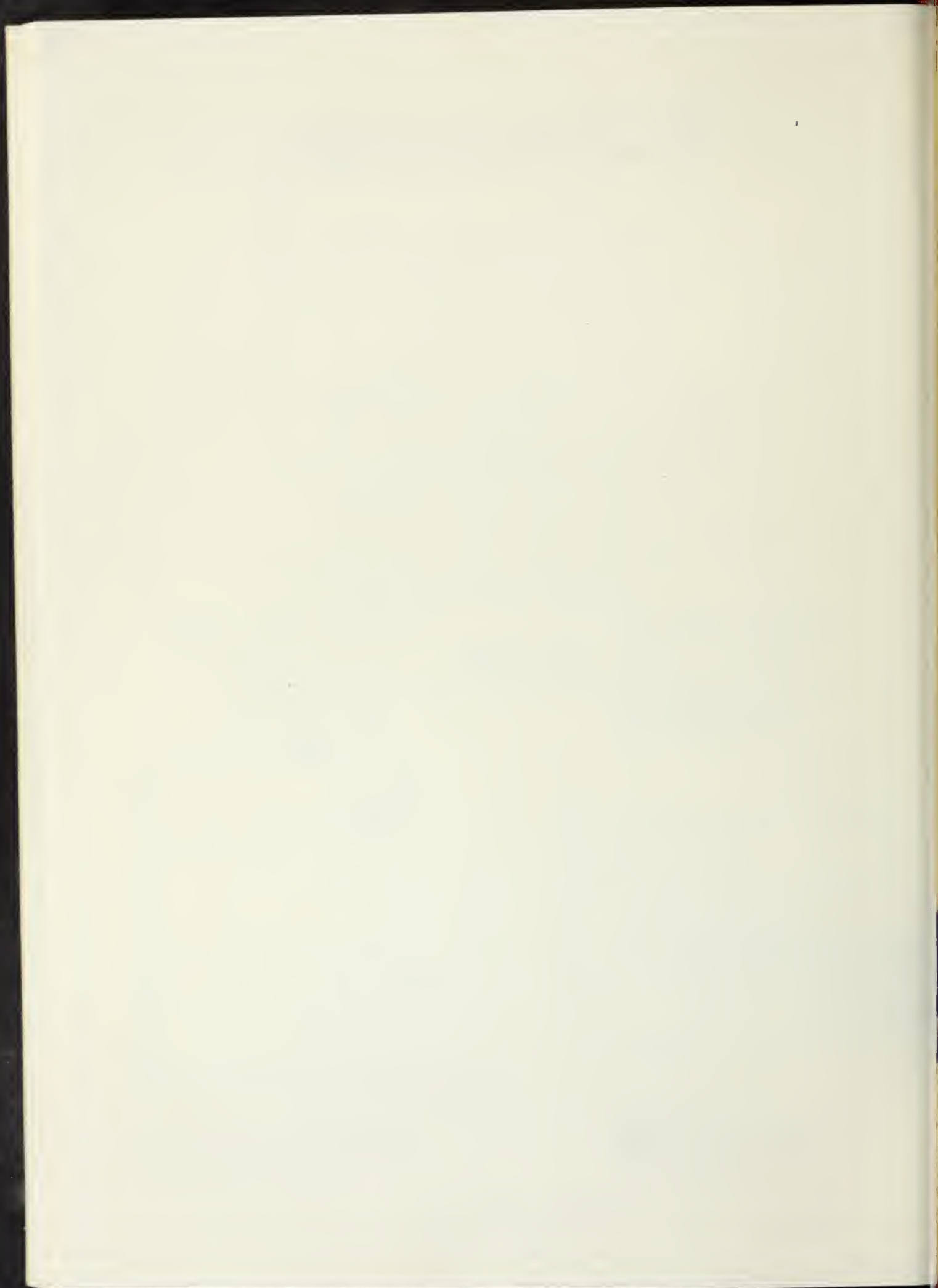
Belmont (60%)

Newton (30%)

### Square Mileage Covered

73.3

\*Service extended 2/1/83







## APPENDICES



# APPENDIX I

## 1982 STATISTICS

Population of 79 communities in (T) District  
(1980 U.S. Census-Preliminary) ..... 2,608,638

### Number of Routes

Bus ..... 152  
Streetcar ..... 5  
Rapid Transit ..... 3  
Trackless Trolley ..... 4  
Commuter Rail ..... 8

### Number of Vehicles (Active Fleet)

Buses ..... 1,050  
Streetcars (PCC's 100, Light Rail Vehicles 125) ..... 225  
Rapid Transit Cars ..... 354  
Trackless Trolleys ..... 50  
Commuter Rail: (Locomotives 38, Coaches 138) ..... 176

### Passengers

Weekday Passengers ..... 521,500  
Basic (T) System (Estimated): 483,000  
Commuter Rail (Actual): 38,500  
Annual Passengers ..... 154,800,000  
Basic (T) System (Estimated): 144,400,000  
Commuter Rail (Actual): 10,400,000

### Stations

Rapid Transit, Including Riverside and Mattapan Lines ..... 83  
Commuter Rail ..... 92

### Track Miles (One-Way)

Subway ..... 15  
Bridges, Elevated, and Surface ..... 48.2

### Route Miles (One-Way)

Rapid Transit ..... 42.3  
Red Line: Harvard/Brattle-Ashmont, 9.6  
Harvard/Brattle-Braintree, 15.0  
Orange Line: Forest Hills-Oak Grove, 10.8  
Blue Line: Bowdoin-Wonderland, 6.2  
Rapid Transit Under Construction ..... 8.4  
Red Line Northwest Extension, 3.7  
Southwest Corridor Orange Line Relocation, 4.7  
Streetcar ..... 34.8  
Riverside-North Station, 12.0; Arborway-Park, 5.7;  
Lake Street-Lechmere Via Commonwealth Ave., 8.0;  
Cleveland Circle-Lechmere via Beacon Street, 6.6;  
Ashmont-Mattapan, 2.5



Trackless Trolley .....	15.75
Bus .....	680
Commuter Rail .....	500
North Station: to Gardner, 65; to Lowell, 25; to Haverhill, 33; to Ipswich, 28; to Rockport, 35	
South Station: to Framingham, 22; to Franklin, 28; to Stoughton, 19; Attleboro, 31	

#### **Manpower**

Employees (Operating Budget) .....	5,353
Collective Bargaining Units .....	29

# APPENDIX II

## MASSACHUSETTS BAY TRANSPORTATION AUTHORITY COMPARISON OF NET COST OF SERVICE — TWELVE MONTH PERIOD CALENDAR YEARS 1982 (ESTIMATED) V.S. 1981 (ACTUAL)

	1982	1981	Increase or (Decrease)
Income:			
Revenue from Transportation	\$93,272,962.46	\$81,811,654.97	\$11,461,307.49
Revenue from Other Railway Operations	3,365,598.70	3,101,327.40	264,271.30
Non-Operating Income	8,102,602.37	17,227,922.60	(9,125,320.23)
Gas & Diesel Tax Reimbursement	489,400.00	517,631.00	(28,231.00)
Reimbursement from Outside District	922,589.00	1,509,559.58	(586,970.58)
<b>Total Income</b>	<b>106,153,152.53</b>	<b>104,168,095.55</b>	<b>1,985,056.98</b>
Operating Wages and Fringe Benefits:			
Wages	138,418,305.52	137,873,214.35	545,091.17
Gen. & Adm. Cost Capitalized-Credit	(1,721,868.40)	(2,060,840.23)	338,971.83
MBTA Pensions	19,895,375.51	20,588,564.30	(693,188.79)
Social Security Taxes	10,644,783.74	10,383,167.49	261,616.25
Workmen's Compensation	3,997,759.33	3,281,399.11	716,360.22
Accident and Sickness Insurance	391,212.66	427,970.92	(36,758.26)
Group Life Insurance	916,364.48	909,420.80	6,943.68
Blue Cross — Blue Shield	18,430,478.84	16,403,968.19	2,026,510.65
Unemployment Insurance	195,000.00	786,430.00	(591,430.00)
Uniform and Work Clothes	561,470.67	532,614.82	28,855.85
Fringe Benefits Cost Capitalized — Credit	(7,072,080.00)	(7,482,212.84)	410,132.84
<b>Total Operating Wages &amp; Fringe Benefits</b>	<b>184,656,802.35</b>	<b>181,643,696.91</b>	<b>3,013,105.44</b>
Material and Other Items	32,638,005.03	30,689,514.25	1,948,490.78
Injuries and Damages	2,884,880.58	2,940,879.94	(55,999.36)
Interest on Unfunded Debt	21,384,355.11	22,868,808.02	(1,484,452.91)
Fuel	21,204,360.32	23,239,836.73	(2,035,476.41)
Taxes (Other than included above)	990,463.80	1,008,541.43	(18,077.63)
Railroad Commuter Subsidy	45,254,047.98	47,096,949.63	(1,842,901.65)
Local Service Subsidies	1,513,086.96	1,511,199.92	1,887.04
<b>Total Operating Expenses and Taxes</b>	<b>310,526,002.13</b>	<b>310,999,426.83</b>	<b>(473,424.70)</b>

Fixed Charges:			
Interest on Funded Debt (MTA)	3,448,135.03	3,637,624.23	(189,489.20)
Interest on Funded Debt (MBTA)	29,635,751.00	20,891,292.08	8,744,458.92
Payment on Funded Debt (MTA)	2,631,925.94	2,537,259.26	94,666.68
Payment on Funded Debt (MBTA)	12,900,834.62	10,685,000.00	2,215,834.62
Bond Discount Amortization (MBTA)	—	21,150.00	(21,150.00)
Miscellaneous Debits (MTA)	90,756.03	45,988.62	44,767.41
Bank Service Charges (MBTA)	73,687.59	23,870.32	49,817.27
<b>Total Fixed Charges</b>	<u>48,781,090.21</u>	<u>37,842,184.51</u>	<u>10,938,905.70</u>
<b>Total Current Expenses</b>	<u>359,307,092.34</u>	<u>348,841,611.34</u>	<u>10,465,481.00</u>
<b>Cost of Service in Excess of Income</b>	253,153,939.81	244,673,515.79	8,480,424.02
Less: State and Federal Assistance:			
Chap. 161A of G.L. (Sec. 28) — MTA	3,000,000.00	3,000,000.00	—
Chap. 161A of G.L. (Sec. 28) — MBTA	37,660,762.80	29,906,496.18	7,754,266.62
Chap. 329, Acts of 1980 — MBTA (RR)	—	1,546,059.00	(1,546,059.00)
Chap. 351, Acts of 1981 — MBTA (RR)	2,790,137.00	2,935,000.00	(144,863.00)
Chap. 49, Acts of 1981 — MBTA (RR)	—	2,120,339.00	(2,120,339.00)
Chap. 191, Acts of 1982 — MBTA (RR)	3,214,000.00	—	3,214,000.00
Chap. 191, Acts of 1982 — MBTA	—	96,404,824.86	(96,404,824.86)
House Bill No. 1 Pending			
Approval — MBTA	94,414,127.01	—	94,414,127.01
Federal Operating Assistance — Sec. 5	<u>23,199,913.00</u>	<u>26,236,287.00</u>	<u>(3,036,374.00)</u>
<b>Total Assistance</b>	164,278,939.81	162,149,006.04	2,129,933.77
<b>Net Assessable Cost of Service — Loss</b>	\$88,875,000.00	\$82,524,509.75	\$6,350,490.25

(Does not include State Treasurer's interest charges on BMD Expenses)

Assumes a Total Assessment on (T) District of \$97.4M in 1982 and \$95.0M in 1981.



# APPENDIX III

## CHAPTER 581

### Definition

Chapter 581 of the Acts of 1980 was enacted by the Legislature and signed by the Governor on December 7, 1980. This Chapter is commonly known as the Management Rights Act because it provides MBTA management with the capability to operate the Authority in a manner consistent with normal management prerogatives. These prerogatives, which include most of the major provisions of the Act, include the following:

1. The right to direct, appoint, employ, assign and promote officers, agents and employees.
2. The right to discharge and terminate employees, subject to specific clauses which prohibit such discharge or termination on the basis of race, color, religion, sex, age, national origin, handicapping condition, marital status, political affiliation, or union activities.
3. The right to plan and determine the levels of service provided by the Authority.
4. The right to direct, supervise, control, and evaluate the Authority's departments, units, and programs; as well as the right to classify positions and establish duties and productivity standards.
5. The right to develop and determine levels of staffing and training.
6. The right to determine whether goods or services should be made, leased, contracted for, or purchased on either a temporary or permanent basis.
7. The right to assign and apportion overtime.
8. The right to hire part-time employees.

Other provisions of the Act include, but are not limited to, various items concerning the responsibilities of the Board of Directors, the sale of notes and bonds, and the change in the Authority's budget from a calendar year basis to the State fiscal year as of July 1, 1983.

Due to a union appeal of this legislation, implementation of Chapter 581 did not occur until October 22, 1981 after the Federal Appeals Court affirmed the legality of the Act's provisions.

### Management Action

Since implementation began, the MBTA has initiated a number of actions, all of which have had two major objectives: first, to improve service; and second, to reduce expenses, assuming no degradation in the improvement of service efficiency. Examples of these actions include the following.

1. On October 22, 1981, a new policy regarding the allocation of overtime was instituted. This new policy changed the strict seniority-first rule to one which enabled management to select the most capable and available person for the overtime work. The new policy also incorporates a provision which prohibits workers with poor attendance records to be eligible for overtime. During 1981, MBTA management reduced overtime expenditures by \$5,803,149, or a reduction in overtime hours of 60%.
2. On October 22, 1981, the Authority stopped the practice of restricting Operators to the assignment of one detail at a time. Operators now can be assigned more than one detail without having to return to their originating point, thus increasing the productivity of those employees.
3. On October 22, 1981, the Authority stopped the practice of allowing senior individuals to obtain overtime on night work trains if it resulted in the inability of that individual to work his regularly scheduled work on the next day (six-hour off work rule). This practice had created overtime expenditures to cover individuals not able to perform regularly scheduled work.

4. On October 26, 1981, the MBTA stopped the practice of not allowing a "blueprint" cover operator from going to another location to cover a vacant run. Old rules prohibit the reassignment of individuals between locations (increased productivity).
5. On October 26, 1981, the Authority abolished a work rule which prohibited a conductor on the second car of a Green Line train from being reassigned as the Operator of a one-car train (increased productivity).
6. On November 17, 1981, the Authority initiated a series of meetings with the Carmen's Union regarding the work practices within the Authority's money room operation. The meeting resulted in a plan agreed upon by union and management. Based on 1982 year end and February 1983 expenditures, the projected annual savings for the money room is expected to be \$201,274.58. This savings has been accomplished by a combination of increased productivity and new equipment (revised 3/18/83).
7. On November 28, 1981, the Authority reassigned car cleaners and shifters on the Green Line to locations and work shifts where management determined a need existed. This was accomplished without observing former restrictions requiring bidding for locations and shift times (increased productivity).
8. On November 28, 1981, management established a policy that, if a car cleaner on the Green Line was qualified to perform shifter's work, he would do so if the need existed. Conversely, if a shifter was not shifting and cleaning work was needed, shifters would be required to clean vehicles (increased productivity).
9. On November 28, 1981, the Authority reclassified stock clerks as roving stock clerks. They now may cover more than one location. This action has resulted in increased productivity and a cost avoidance of hiring stock clerks for each location (\$30,000 to \$60,000 in savings).
10. On November 28, 1981, the Authority reassigned 22 of the 44 individuals who were assigned only to track walking to preventive maintenance and other duties. The remaining 22 track walkers were assigned to cover track based on needs dictated by track reliability data (increased productivity).
11. Starting in November 1981, and on a continuous basis thereafter, the Authority developed specifications for the cleaning of stations, buildings and vehicle interiors. As a result of this work, the Authority has implemented the following contracts.

Contract Area	Amount (Annual Basis)	Contract Start Date	Annual Savings
1. Janitorial Services - All "T" facilities	\$674,474.00	6/21/82	\$395,530.00
2. Interior Cleaning of Buses - Charlestown, Fellsway and Lynn Garages	276,768.60	6/5/82	157,231.40
3. Interior Cleaning of Buses - Albany, Cabot, Bartlett and Quincy Garages	394,187.60	10/22/82	328,356.60
4. Blue Line Station Cleaning	243,900.00	6/21/82	140,008.00
5. Downtown Station Clean- ing - Washington St., Park St., Government Center (Green only) and State St. (Orange only)	309,966.00	11/23/82	204,261.90

6. Green Line (North) Station Cleaning - Haymarket, N. Station, Science Park and Lechmere	117,000.00	12/15/82	52,154.19
7. Red Line Station Cleaning Contract - Charles/ MGH, Kendall, Central, Harvard/Holyoke and Harvard/Brattle	103,272.00	12/15/82	129,357.82
8. Green Line Station Cleaning - Boylston, Arlington, Copley, Auditorium, Kenmore Prudential and Symphony	167,328.00	12/15/82	216,973.15
9. Orange Line Station Cleaning — Community College, Sullivan Sq., Wellington, Malden Center & Oak Grove	90,000.00	12/15/82	191,243.09
10. Interior Cleaning of Red Line Vehicles	98,354.00	Est. 4/2/83	338,070.95
TOTAL	2,475,280.20		2,153,187.10

(Revised 3/18/83)

12. On November 28, 1981, the Authority changed the method of rubbish collection to enable carhouse and garage personnel to dispose of rubbish into dumpsters rather than sending special groups of workers out to pick up trash (increased productivity).
13. On November 28, 1981, the Authority stopped the practice of sending two welders and two grinders on work assignments. Now one welder and one grinder will be assigned to accomplish the same work previously done by four employees (increased productivity).
14. On November 28, 1981, the Authority abolished two tool room attendant positions and reassigned the individuals as car cleaners. This avoided approximately \$60,000 in labor costs which would have occurred if the vacant car cleaner positions were filled with outside personnel.
15. On December 1, 1981, the Authority reassigned 36 repairmen on the Green Line to locations and shifts as determined by management. This was accomplished without a re-pick (increased productivity).
16. On December 1, 1981, the Authority reassigned 27 individuals working on LRV modifications to new shift hours without re-picking (increased productivity).
17. The MBTA eliminated the system-wide selection of work by surface operators which was scheduled for 1981. This action will save approximately \$85,000 in training and retraining costs.
18. The MBTA curtailed the posting and bidding of vacancies which in the past has created extensive movement of the work force among the various locations of the Authority. This action will result in a savings of approximately \$150,000 associated with training, retraining and administration time.
19. During November, December and January, the Authority held meetings with the Carmen's Union regarding the employment of part-time bus operators. The Union strongly objected to implementation of part-time operators, but the Authority integrated 20 part-time employees into the winter schedule in Quincy. Since then, the employment of part-time operators has continued at a more rapid pace than originally anticipated. Eighty part-time operators were



added to the summer, 1982 schedule. An additional 120 part-time operators are being hired for the fall, 1982 schedule, and 200 more will be added during 1983/FY84. Annualized savings from the hiring of part-time workers may exceed \$6 million.

20. The Machinists' Union was advised in two meetings during January and February, 1982, that it is the intention of the Authority to implement part-time fuelers in the automotive area and to combine machinists' classifications in the Everett Shops. The use of a third classification of mechanics to take over fueling tasks, allowing 39 1st and 2nd class mechanics now performing these duties to be reassigned to bus maintenance and repair is now anticipated to start by the fall of 1982. This reassignment will be phased in at all garages over a period of several months. Annual savings to the Authority will be approximately \$685,000 based on the lower rate of pay for this third classification. Additionally, increased productivity by reassigning trained mechanics from their fueling duties to bus maintenance is expected.
21. Also accomplished in 1981, either directly by the passage of Chapter 581 or by assistance it afforded, were:
  - a. Reduction in the number of T employees in 1981 by 609. The annualized savings of this decrease is approximately \$21 million.
  - b. The contribution required on overtime earnings to the pension fund was abolished. The annualized savings to the Authority based on 1981 overtime would be approximately \$515,000.
  - c. Abolition of automatic cost-of-living salary adjustments. Savings over the last year was \$15 to \$20 million.
22. The Authority integrated thirteen part-time gatemen into the summer 1982 schedule. Annualized savings from this action are expected to be approximately \$165,000.
23. The Authority placed a system-wide restriction on the internal bidding procedures. All employees must now stay a minimum of two years in a job before they are eligible to bid for a new position. This should increase productivity and reduce the costs normally associated with the constant movement of employees (such as training and administrative costs).
24. Engineering and Maintenance electrical workers have been assigned and will only be allowed to bid for jobs for which the Authority determines they are qualified. This will increase productivity and decrease training costs.
25. The Authority eliminated the practice of requiring yard motormen to drive tampers out of the yard. Operators now perform this function, eliminating the overtime that was usually paid to yard motormen for this duty.
26. The Authority has changed the normal work week for trackmen to include weekends. This decreases overtime paid for weekend work. It also increases productivity and reduces service interruptions by allowing the Authority to increase the amount of track work done on weekends when fewer vehicles are operating.
27. The practice of having to assign five roofers every time a "kettle" is used has been eliminated, resulting in increased productivity.
28. The Authority is now purchasing, from private companies, fabricated ductwork as necessary. Previously all such work had to be done in the Authority's own shops.
29. Warranty repair work on buses, which in the past had been performed by Authority personnel, was recently done by representatives of the bus company (Canadian Flyer). This led to an increase in productivity (Authority bus mechanics could continue with their regular duties). This action should also improve the strength of any future claims made under the warranty agreement.
30. The Authority established a new classification and rate of pay for information specialists. By establishing a new classification for this work, the Authority avoided higher costs for the work. The information specialist should improve the Authority's ability to deliver information to the public.

31. The Authority has eliminated the practice of automatically assigning switch cleaners to work in pairs over the winter. Whether or not cleaners are assigned in pairs will be determined by management. This will result in an increase in productivity.
32. Engineering and Maintenance crew sizes, which were previously determined by collective bargaining agreement, are now being evaluated and assigned at management's discretion (4-man power line crew, 3-man emergency crew).
33. On May 27, 1982 the Authority signed a one year contract with a private security firm to provide watchmen services at 3 Authority locations. The contract is for \$163,501 and is expected to save the Authority \$234,083 on an annual basis.
34. On March 10, 1983 the Board of Directors approved a \$6 million contract award for Blue Line Track Improvements. Previous to C.581 this type of work could not have been awarded to an outside firm.
35. Engineering and Maintenance truck drivers will replace motormen on high speed rail vehicles. This will result in an estimated annual savings of \$37,616.
36. Engineering and Maintenance trackmen will begin doing their own rail burning, replacing ironworkers who previously did this work. This change of assignment will result in the saving of the equivalent of \$87,051 of ironworkers' time to perform other needed duties.
37. The Authority is currently preparing to implement changes in the job responsibilities and the method of assignment of Engineering and Maintenance truck drivers. These changes, which include broadening the truck drivers' responsibilities to include first level maintenance, are estimated to save the Authority \$175,909 on an annual basis.
38. Continuing the process begun in November 1981 (see item #11), the contract for the Interior cleaning of Buses at the Charlestown, Fellsway and Lynn Garages was rebid after one year, upon its expiration. The contract was awarded to the low bidder at an annual cost of \$282,530.40. This contract, for the period June 7, 1983 to June 6, 1984 is estimated to save the Authority between \$312,219.17 and \$396,751.28 on an annual basis.
39. The Authority continued the practice of having an outside security firm provide watchmen services by rebidding this contract after the original one year contract expired (see item #33). The contract, which is for the period May 29, 1983 to May 28, 1984, is for \$162,762.96 and is estimated to save the Authority between \$270,761.84 and \$309,243.93.

## APPENDIX IV

# SIGNIFICANT MBTA EVENTS

## 1982

- January 16 — Dorchester Branch of the Red Line between Columbia Station and Ashmont, including the High Speed trolley line (Ashmont-Mattapan), reopens after extensive rebuilding.
- March 1 — New Flyer buses with wheelchair lifts put into service.
- March 11 — General Manager James F. O'Leary announces that the MBTA will save \$6.9 million due to an innovative bond financing.
- March 16 — The MBTA becomes one of the first major transit agencies in the United States to have its Affirmative Action/Equal Opportunity Plan approved by the federal government.
- May 1 — Multiple service improvements and fare reduction go into effect.
- May 12 — MBTA expands experimental South Shore bus service to and from Marshfield, Hanover and South Weymouth.
- June 4 — Reconditioned Budd Cars (Commuter Rail) go into service.
- June 26 — Arborway-Huntington Green Line reopens for trolley service after two years of reconstruction.
- July 23 — Legislation signed that will allow the completion of the "Southwest Corridor Project", a new rapid transit line for Boston and single largest construction project in city history.
- August 23 — The MBTA dedicates a \$500,000 Commuter Rail Station and a 200-car parking facility in West Natick, marking the first time in the past six years that an entirely new depot was constructed to meet the growing demands of Commuter Rail ridership.
- September 10 — MBTA dedicates a \$3 million power switching facility in honor and memory of Lawrence M. Fleming, an MBTA employee who died on duty.
- October 17 — 100th National Convention of the American Public Transit Association hosted by MBTA begins in Boston. 3,000 transit officials attend from throughout North America.
- November — 98.96% of all scheduled 200,180 MBTA trips completed during month of November; the highest record since compilation of statistics began in 1979.
- November 12 — Assessments paid by the district's 79 cities and towns decrease for the first time in five years, due to a legislative spending cap and additional state aid.
- December 2 — Two Red Line stations renamed. Columbia becomes J.F.K./U.Mass; and Kendall becomes Cambridge Center/MIT.
- December 14 — Commuter Rail ridership increases 9.2%; record 10 million passengers for the year.



# APPENDIX V

## MBTA HOSTS 100TH APTA CONVENTION

In December 1882, the leading officials of 60 American street railway systems gathered in a Boston hotel to form what was to become the American Public Transit Association (APTA). The historic significance was not lost upon the 3,000 APTA members who travelled to Boston for the October 18-20, 1982 100th Annual Meeting of the Association which was hosted by the MBTA.

Representatives of 400-member transit companies and industry suppliers attended numerous sessions and workshops on modern transportation techniques and procedures. In addition, many took the opportunity to tour the MBTA system and its supporting operations.

At the Convention, MBTA General Manager James F. O'Leary delivered a presentation on "Making Transit More Productive". Mr. O'Leary was presented with an award from the Urban Mass Transportation Administration citing the significant efficiencies implemented at the MBTA in recent years.

Featured guest speakers at the APTA Convention included Speaker of the House Thomas P. O'Neill, Senator Edward M. Kennedy, Senator Alfonse D'Amato, Congressman J. Joseph Moakley, Congressman Brian J. Donnelly, Detroit Mayor Coleman A. Young and former Governor John A. Volpe.



The task of registering the 3,000 Conference attendees was handled smoothly by both T forces and APTA staff members.



400 transit companies and industry suppliers were represented at the three-day event which celebrated the centennial of the Association's founding.



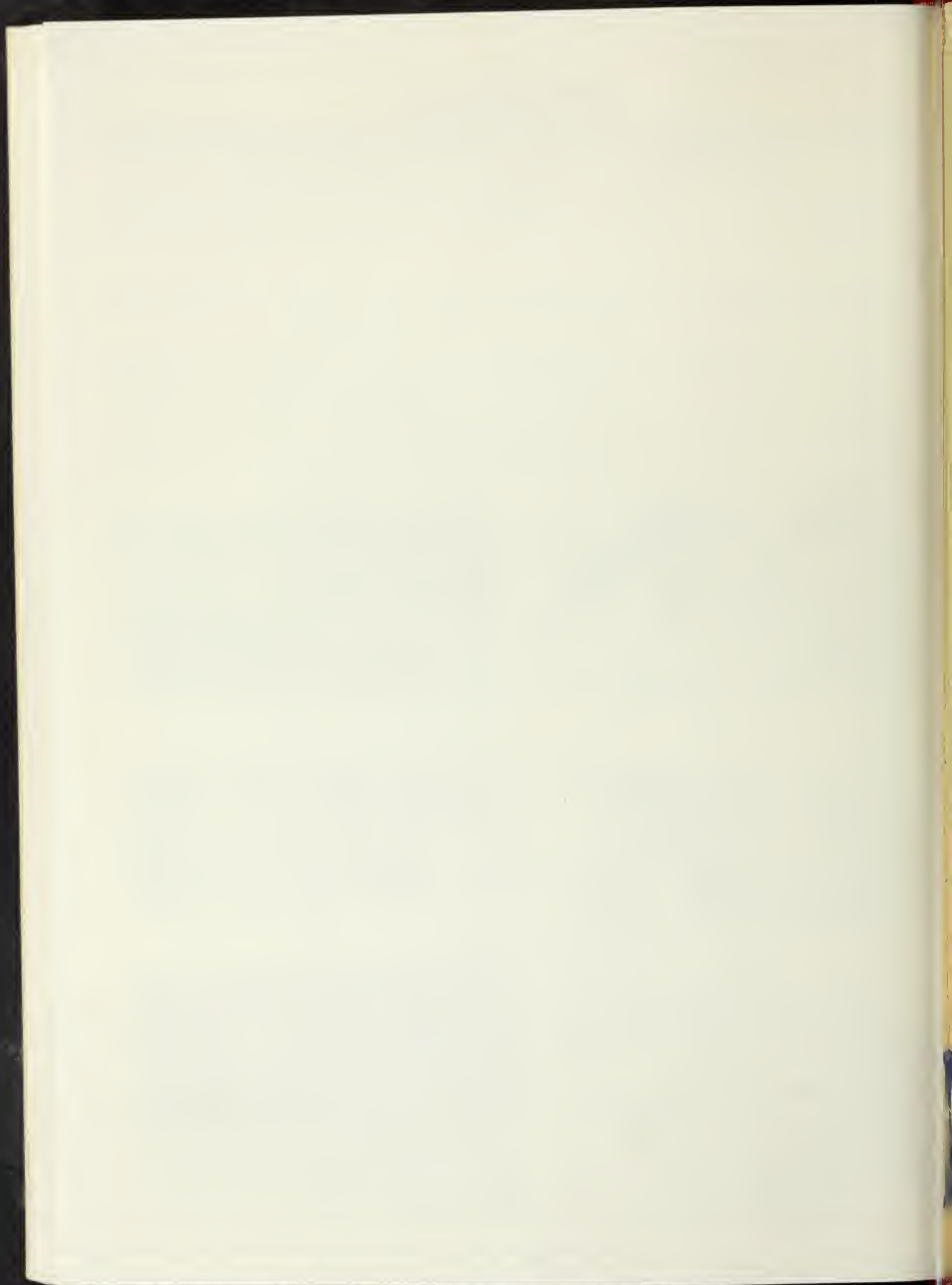
T Personnel and APTA members board a train of 1924 vintage Blue Line cars. The vehicles were reactivated as a tribute to the 100 years of APTA service. For the duration of the convention, these cars were the oldest in-service transit vehicles in the country.

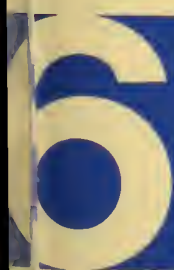


Guest speaker, Speaker of the House Thomas P. O'Neil addresses the Convention.



Senator Edward M. Kennedy prepares his remarks which will be presented shortly to the gathering. Seated to Kennedy's right is T General Manager James F. O'Leary.





# FINANCIAL STATEMENTS





## **To The Board of Directors of Massachusetts Bay Transportation Authority:**

We have examined the balance sheet and statement of bonds payable of the MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (a political subdivision of the Commonwealth of Massachusetts) as of December 31, 1982 and 1981, and the related statements of revenue and cost of service, unreimbursed cost of service and changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the financial statements referred to above present fairly the financial position of the Massachusetts Bay Transportation Authority as of December 31, 1982 and 1981, and the results of its operations and the changes in its financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Arthur Andersen & Co.

Boston, Massachusetts,  
March 30, 1983.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY  
BALANCE SHEET —  
DECEMBER 31, 1982 AND 1981  
(\$000 Omitted)**

**ASSETS**

	1982	1981
<b>TRANSPORTATION PROPERTY</b> , at cost (Notes 1 and 7):		
Transportation property in service	\$1,269,226	\$1,118,547
Less — Accumulated depreciation	272,980	241,161
	\$ 996,246	\$ 877,386
Construction in progress	796,341	612,724
Property held for expansion (Note 9)	12,240	12,240
	<u>\$1,804,827</u>	<u>\$1,502,350</u>
 <b>SPECIAL FUNDS</b> , consisting of cash and certificates of deposit:		
Settlement funds (Note 8)	\$ 52,679	\$ 45,520
Construction funds	3,641	10,217
Federal grant and other special funds (Notes 1 and 7)	2,895	3,641
	<u>\$ 59,215</u>	<u>\$ 59,378</u>
 <b>CURRENT ASSETS:</b>		
Cash	\$ 1,531	\$ 1,661
Temporary cash investments	30,682	10,718
Accounts receivable —		
Commonwealth of Massachusetts (Notes 1 and 3)	181,465	194,841
Federal Department of Transportation (Notes 4 and 5)	22,980	26,284
Other	11,239	10,418
Materials and supplies, at average cost	17,702	15,518
Prepaid expenses	1,793	1,008
	<u>\$ 267,392</u>	<u>\$ 260,448</u>
 <b>DEFERRED CHARGES</b>	 \$ 12,133	 \$ 12,008
	<u>\$2,143,567</u>	<u>\$1,834,178</u>

The accompanying notes are an integral part of these financial statements.



**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**  
**BALANCE SHEET —**  
**DECEMBER 31, 1982 AND 1981**  
**(\$000 Omitted)**

**LIABILITIES**

	1982	1981
<b>LONG-TERM DEBT</b> , exclusive of current maturities:		
Bonds payable (See Separate Statement)	\$ 518,533	\$ 478,020
Loans payable to Federal Department of Transportation, including accrued interest of \$4,143 in 1982 and \$17,912 in 1981 (Note 9)	<div style="text-align: right;">11,548</div> <div style="text-align: right;"><u>\$ 530,081</u></div>	<div style="text-align: right;">54,937</div> <div style="text-align: right;"><u>\$ 532,957</u></div>
<b>UNREIMBURSED COST OF SERVICE</b> (Note 1)	<u>\$ (22,411)</u>	<u>\$ (20,147)</u>
<b>GRANTS</b> (Notes 1, 7 and 9):		
Federal grants	\$1,378,942	\$1,060,502
Local grants	22,296	20,773
	\$1,401,238	\$1,081,275
Less — Accumulated amortization	<div style="text-align: right;">111,504</div> <div style="text-align: right;"><u>\$1,289,734</u></div>	<div style="text-align: right;">87,319</div> <div style="text-align: right;"><u>\$ 993,956</u></div>
<b>CURRENT LIABILITIES:</b>		
Current maturities of bonds payable (See Separate Statement)	\$ 19,768	\$ 15,262
Notes payable (Note 6)	195,000	195,000
Accounts payable	38,486	33,825
Accrued liabilities —		
Payroll (Note 2)	8,463	2,168
Interest	23,492	23,848
Other	6,970	10,220
	<u>\$ 292,179</u>	<u>\$ 280,323</u>
<b>COMMITMENTS AND CONTINGENCIES</b> (Notes 1,2,7,8, 10 and 11)		
<b>DEFERRED CREDITS</b> (Note 8)	<div style="text-align: right;">\$ 53,984</div> <div style="text-align: right;"><u>\$2,143,567</u></div>	<div style="text-align: right;">\$ 47,090</div> <div style="text-align: right;"><u>\$1,834,179</u></div>

The accompanying notes are an integral part of these financial statements.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**  
**STATEMENT OF REVENUE AND**  
**COST OF SERVICE**  
**FOR THE YEARS ENDED DECEMBER 31, 1982 AND**  
**1981**  
**(\$000 Omitted)**

	1982	1981
<b>OPERATING REVENUE</b> , not including local and federal assistance:		
Passenger revenue	\$ 93,273	\$ 81,812
Other	3,366	3,101
	<u>\$ 96,639</u>	<u>\$ 84,913</u>
<b>OPERATING EXPENSES</b> (Notes 1, 2 and 12):		
Labor	\$ 117,295	\$ 115,398
Fringe benefits (Note 10)	67,362	66,193
Depreciation and amortization	36,538	31,930
Materials and supplies —		
Fuel	7,506	7,639
Other	13,829	12,769
Utilities —		
Propulsion power	13,737	15,615
Other	10,043	10,115
Services	7,298	7,058
Casualty and liability costs	4,225	3,793
Railroad commuter expense, net (Note 5)	47,947	47,447
Other	2,756	2,523
	<u>\$ 328,536</u>	<u>\$ 320,480</u>
<b>OPERATING LOSS</b>	<u>\$ (231,897)</u>	<u>\$ (235,567)</u>
<b>OTHER INCOME</b> , including interest of \$6,582 in 1982 and \$14,772 in 1981 and the sale of certain tax benefits of \$1,444 in 1982 and \$2,339 in 1981	8,103	17,228
<b>INTEREST EXPENSE</b> , including long-term debt interest of \$37,558 in 1982 and \$31,328 in 1981	(57,274)	(49,944)
<b>PROVISION FOR POWER GENERATING EQUIPMENT</b> (Note 11)	(2,456)	(5,155)
<b>COST OF SERVICE IN EXCESS OF REVENUE</b> (Notes 1 and 3)	<u>\$ (283,524)</u>	<u>\$ (273,438)</u>

The accompanying notes are an integral part of these financial statements.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**  
**STATEMENT OF UNREIMBURSED**  
**COST OF SERVICE**  
**FOR THE YEARS ENDED DECEMBER 31, 1982 AND**  
**1981**  
**(\$000 Omitted)**

	1982	1981
<b>BALANCE AT BEGINNING OF YEAR</b>	\$ (20,147)	\$ (13,094)
<b>ADD —</b> Cost of service in excess of revenue	<u>(283,524)</u>	<u>(273,438)</u>
<b>DEDUCT</b>		
Net cost of service reimbursable by the Commonwealth of Massachusetts, a portion of which is to be assessed to the cities and towns constituting the Authority (Note 3)	183,289	178,929
Contract assistance for debt service pursuant to Section 28 of Chapter 161A of the General Laws as amended (Note 3)	40,661	32,906
Other contract assistance (Notes 3 and 5)	6,004	6,601
Reimbursement of the Authority's Net Cost of Service (Note 1(a))	<u>\$ 229,954</u>	<u>\$ 218,436</u>
Federal operating assistance pursuant to Section 5 of the Urban Mass Transportation Act of 1964, as amended (Note 4)	\$ 23,200	\$ 26,237
Reimbursement of railroad commuter expense by government entities outside the Authority's area (Note 5)	923	1,510
Reimbursement by the Commonwealth of railroad commuter maintenance expense (Note 5)	2,343	—
State diesel and gasoline fuel taxes reimbursable to the Authority in accordance with Section 2 of Chapter 563 of the Acts of 1964	489	518
Other Reimbursements	<u>\$ 26,955</u>	<u>\$ 28,265</u>
Amortization of grants (Notes 1 and 7)	<u>\$ 24,351</u>	<u>\$ 19,684</u>
<b>BALANCE AT END OF YEAR</b>	<u><u>\$ (22,411)</u></u>	<u><u>\$ (20,147)</u></u>

The accompanying notes are an integral part of these financial statements.



**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**  
**STATEMENT OF CHANGES**  
**IN FINANCIAL POSITION**  
**FOR THE YEARS ENDED DECEMBER 31, 1982 AND**  
**1981**  
**(\$000 Omitted)**

	1982	1981
<b>OPERATIONS</b>		
Cash Was Used For:		
Cost of service in excess of revenue	\$283,524	\$273,438
Charges to cost of service not requiring current expenditure of cash:		
Depreciation	(35,793)	(31,162)
Amortization of deferred charges	(1,523)	(1,118)
Interest accrued on federal loan	(2,802)	(2,802)
Provision for power generating equipment	(2,456)	(5,155)
	<u>\$240,950</u>	<u>\$233,201</u>
Increase (decrease) in working capital except for cash and temporary cash investments	(24,742)	12,768
Payment of bonds payable	19,768	15,262
Other	(2,953)	1,418
Cash Used for Operations and Bond Payments	<u>\$233,023</u>	<u>\$262,649</u>
Cash Was Provided for Operations and Bond Payments By:		
Reimbursement by the Commonwealth for the Authority's Net Cost of Service	\$229,954	\$218,436
Other reimbursements	26,955	28,265
Cash Provided for Operations and Bond Payments	<u>\$256,909</u>	<u>\$246,701</u>
<b>CAPITAL AND FINANCING ACTIVITIES</b>		
Cash Was Used For:		
Additions to transportation property, net	<u>\$338,270</u>	<u>\$301,505</u>
Cash Was Provided By:		
Grants from federal and other sources	\$319,963	\$252,552
Forgiveness of federal loan (Note 9)	(46,190)	—
Sale of long-term debt	60,282	45,000
Use of special funds	163	3,254
	<u>\$334,218</u>	<u>\$300,806</u>
<b>INCREASE (DECREASE) IN CASH AND TEMPORARY CASH INVESTMENTS</b>	<b>\$ 19,834</b>	<b>\$ (16,647)</b>
Cash and Temporary Cash Investments:		
Beginning of Year	12,379	29,026
End of Year	<u>\$ 32,213</u>	<u>\$ 12,379</u>

The accompanying notes are an integral part of these financial statements.

# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## STATEMENT OF BONDS PAYABLE

### DECEMBER 31, 1982 AND 1981

#### (Notes 6 and 7)

Massachusetts Bay Transportation Authority General Transportation System Bonds issued under General Laws, Chapter 161A, Section 23 of the Commonwealth of Massachusetts, are all payable in annual installments on March 1; interest is payable semiannually on March 1 and September 1. The bonds were issued to provide funds for the purposes outlined below. (Dollar amounts in thousands)

Purpose	Year of Maturity	Approximate Annual Payments	Average Interest Rate	Bonds Outstanding December 31,	
				1982	1981
<b>1967 Series A Bonds</b>					
<b>dated March 1, 1967</b>					
Express service transportation facilities	2007	\$1,900	3.79%	\$47,500	\$49,400
Agreement with railroads	1982	350	3.75	—	350
Local service transportation facilities	2007	50	3.79	1,250	1,300
Capital cost of certain transportation facilities including yards, shops and rolling stock	2007	650	3.79	<u>16,250</u>	<u>16,900</u>
				<u>\$65,000</u>	<u>\$67,950</u>
<b>1970 Series A Bonds</b>					
<b>dated September 1, 1970</b>					
Express service transportation facilities	2010	\$1,540	6.38%	\$43,020	\$44,560
Buses and other purposes	1982	275	6.00	<u>—</u>	<u>275</u>
				<u>\$43,020</u>	<u>\$44,835</u>
<b>1972 Series A Bonds</b>					
<b>dated September 1, 1972</b>					
Express service transportation facilities and other capital costs	2012	\$ 865	5.22%	\$25,850	\$26,715
Bus acquisition	1984	290	5.40	580	870
Bus garages	1984	165	5.40	<u>330</u>	<u>495</u>
				<u>\$26,760</u>	<u>\$28,080</u>
<b>1974 Series A Bonds</b>					
<b>dated June 1, 1974</b>					
Express service transportation facilities and other capital costs	2014	\$1,800	6.55%	\$57,000	\$58,800
Bus and trackless trolley acquisition	1986	300	7.00	<u>1,200</u>	<u>1,500</u>
				<u>\$58,200</u>	<u>\$60,300</u>

The accompanying notes are an integral part of these financial statements.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**  
**STATEMENT OF BONDS PAYABLE**  
**DECEMBER 31, 1982 AND 1981**  
**(Notes 6 and 7)**  
**(Continued)**

Purpose	Year of Maturity	Approximate Annual Payments	Average Interest Rate	Bonds Outstanding December 31,	
				1982	1981
<b>1977 Series A Bonds</b> <b>dated September 1, 1977</b>					
Express service transportation facilities and other capital costs	2017	\$2,000	6.29%	<u>\$ 71,000</u>	<u>\$ 71,800</u>
<b>1979 Series A Bonds</b> <b>dated May 1, 1979</b>					
Express service transportation facilities and other capital costs	2019	\$1,500	7.02%	<u>\$ 54,900</u>	<u>\$ 56,600</u>
<b>1981 Series A Bonds</b> <b>dated October 1, 1981</b>					
Express service transportation facilities and other capital costs	2001	\$2,250	13.25%	<u>\$ 42,750</u>	<u>\$ 45,000</u>
<b>1982 Series A Bonds</b> <b>dated April 1, 1982</b>					
Express service transportation facilities and other capital costs	2005	\$2,950	11.90%	<u>\$ 60,282</u>	<u>—</u>
Total General Transportation System Bonds Payable				<u>\$421,912</u>	<u>\$374,565</u>

**Bond Anticipation Notes**

The proceeds from the sale of these notes were deposited in the Construction funds account and were being used for capital costs of the transportation system. The interest rate was 5.75% at December 31, 1982 and 11.9% at December 31, 1981. The Authority refinanced the notes on March 15, 1983 with a General Transportation System Bond issue of \$121 million with interest rates ranging from 4.75% to 9.75% through the year 2008. Annual principal payments through 2008 will range from \$1,600 to \$11,065. The notes have been classified as Long-Term Debt, Bonds Payable on the balance sheet.

\$ 30,000      \$ 30,000

The accompanying notes are an integral part of these financial statements.



# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## STATEMENT OF BONDS PAYABLE

### DECEMBER 31, 1982 AND 1981

#### (Notes 6 and 7)

#### (Continued)

**Boston Metropolitan District (BMD) Bonds** — These bonds were issued for transit purposes prior to formation of the Massachusetts Bay Transportation Authority in 1964. For Construction Bonds, after annual payments are made through the year of maturity as noted below, the remaining balances are payable; however, the Authority intends to refinance these amounts. Therefore, bonds maturing in 1983 have been classified as long-term debt.

Purpose	Year of Maturity	Approximate Annual Payments	Average Interest Rate	Bonds Outstanding December 31,	
				1982	1981
Boston Elevated Railway Company and Metropolitan Transit Authority Debt	2020	\$1,000	5.47%	<u>\$ 37,918</u>	<u>\$ 38,919</u>
Purchase of City of Boston Transit Properties	2024	\$ 536	4.87%	<u>\$ 22,523</u>	<u>\$ 23,059</u>
Equipment Serial Bonds	1987	\$ 127	2.90%	\$ 637	\$ 765
	1988	131	2.90	786	917
	1993	169	3.00	1,859	2,028
	1993	100	3.20	1,100	1,200
				<u>\$ 4,382</u>	<u>\$ 4,910</u>
Construction Bonds	1983	\$ 47	2.75%	\$ 2,162	\$ 2,209
	1984	10	2.30	470	480
	1988	55	3.00	2,805	2,860
	1989	70	3.60	3,623	3,692
	1990	19	3.50	1,007	1,026
	1993	40	3.20	2,240	2,280
	2002	463	9.22	9,259	9,282
				<u>\$ 21,566</u>	<u>\$ 21,829</u>
Total BMD Bonds Payable				<u>\$ 86,389</u>	<u>\$ 88,717</u>
Total Bonds Payable				<u>\$538,301</u>	<u>\$493,282</u>
Less: Current Maturities of Bonds Payable				<u>19,768</u>	<u>15,262</u>
Total Bonds Payable — Long-term				<u><u>\$518,533</u></u>	<u><u>\$478,020</u></u>

The accompanying notes are an integral part of these financial statements.

# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

#### (1) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

##### (a) Unreimbursed Cost of Service

The legislative act under which the Massachusetts Bay Transportation Authority (the Authority) was established provides, among other things, that the Commonwealth of Massachusetts (the Commonwealth) shall reimburse the Authority for its Net Cost of Service, as defined. This amount, to the extent it exceeds contract assistance (see Note 3), is then assessed by the Commonwealth to the cities and towns in the Greater Boston Metropolitan Area constituting the Authority.

The Cost of Service in Excess of Revenue presented on the Statement of Revenue and Cost of Service differs from the Net Cost of Service because the Authority follows generally accepted accounting principles for financial reporting purposes. The following table reconciles the Authority's Cost of Service in Excess of Revenue to its Net Cost of Service for the years ended December 31, 1982 and 1981:

	(\$000 Omitted)	
	1982	1981
Cost of Service in Excess of Revenue	<u>\$283,524</u>	<u>\$273,438</u>
Expenses not assessable —		
Depreciation and amortization in excess of bond principal payments	\$ 21,781	\$ 19,035
Provision for power generating equipment	2,456	5,155
Interest on federal loans	2,378	2,547
Reimbursements for —		
Contracted passenger service outside the Authority	923	1,510
State fuel taxes	489	518
Commuter rail maintenance expense	2,343	—
Federal operating assistance	<u>23,200</u>	<u>26,237</u>
	<u>\$ 53,570</u>	<u>\$ 55,002</u>
Net Cost of Service	<u>\$229,954</u>	<u>\$218,436</u>

##### (b) Transportation Property

Transportation property is stated at historical cost. These costs include Authority labor costs for employees working on capital projects plus related fringe benefits and an allocated share of general and administrative costs.

# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

#### (Continued)

#### (c) Depreciation

Depreciation is provided in the accounts based on the straight-line method at rates which are designed to amortize the original cost of the property over its estimated useful life. The major categories of transportation property in service and the depreciation rates used in 1982 are:

	Rates			Cost (\$000 Omitted)	
	Low	High	Average	1982	1981
Ways and structures	1.33	10.0	2.07	\$ 711,696	\$ 663,839
Equipment	2.22	18.0	5.04	472,697	372,307
Land	—	—	—	84,833	82,401
				<u>\$1,269,226</u>	<u>\$1,118,547</u>

#### (d) Deferred Charges

Certain costs incurred by the Authority, primarily related to the expansion and modernization of its transportation system, have been deferred. These costs are amortized by charges to cost of service over the future periods in which the benefit to the Authority is estimated to be realized.

#### (e) Casualty and Liability Costs

The Authority is a self-insurer on claims for injuries and damages to the extent of \$2,100,000 per accident (\$1,000,000 for non-rail accident). Insurance coverage is carried on claims in excess of that amount up to a maximum limit of \$21,000,000.

The Authority accounts for injuries and damages by charges to operating expense as payments are made. In addition, the Authority has a funded accrual for public liability amounting to \$1,093,000 at December 31, 1982 and \$2,575,000 at December 31, 1981. In the opinion of the Authority's General Counsel, the ultimate settlement of various cases in process at December 31, 1982 will not have a material impact upon the Authority's financial statements.

#### (f) Workmen's Compensation Expense

The Authority is a self-insurer on claims for workmen's compensation to the extent of \$200,000 per occurrence. Insurance coverage is carried on each occurrence in excess of that amount up to a maximum limit of \$4,200,000 per occurrence. The Authority accounts for these claims by charges to operating expense as payments are made.

#### (g) Vacation

The Authority recognizes vacation expense by charges to operating expense in the year the vacation is taken. Unpaid vested vacation pay as of year end amounted to approximately \$9,500,000 in 1982 and \$9,800,000 in 1981.



# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

#### (Continued)

#### (h) Grants

The Authority receives capital expansion grants from certain governmental agencies to be used for various purposes connected with the planning, modernization and expansion of transportation facilities and equipment. Amortization of these grants begins when the related facilities and equipment are put into service. The grants are then amortized over the shorter of the estimated useful life of the assets, or forty years, as a reduction of unreimbursed cost of service.

#### (2) LABOR MATTERS

In December, 1980, legislation was passed (Chapter 581) which, among other things, provided that the Authority not enter into collective bargaining agreements which jeopardize matters of inherent management rights and prohibited the Authority from entering into agreements which provide for pension benefits to its employees determined in a manner that includes overtime earnings or which provide for automatic cost-of-living salary adjustments.

In accordance with the 1980 legislation, the Authority had not granted cost-of-living adjustments in 1981 and has removed overtime earnings from the determination of pension benefits for unions representing the majority of its employees. During 1982, the Authority and Local 589, a union representing approximately 55% of the Authority's union employees, commenced arbitration of terms for extension of their contract which expired in 1980. The arbitrator, in his decision rendered on January 15, 1983, dealt with a number of issues including an award of a pay increase retroactive to January 1, 1982. The Authority has taken steps to implement certain provisions of the award, including the pay increases, and has provided for the cost of the increase related to 1982 by a charge to operating expense in 1982. Employees covered by contracts with other unions which have expired are being paid as provided under those expired contracts. Since negotiations and arbitration with Local 589 have usually set precedent for new agreements with a number of the other unions, an accrual has been made for the cost of retroactive pay or benefit increases which may ultimately be negotiated with those unions. A portion of this accrual results in the need to file a \$1.8 million supplemental budget for approval by the Advisory Board. This amount has been included in the determination of the Net Cost of Service and in accounts receivable from the Commonwealth in anticipation of Advisory Board approval. The expenditure of these funds will not be made until approval is received.

Unions representing employees of the Authority have commenced numerous lawsuits and other actions (1) challenging state legislation affecting the Authority's labor-management practices, (2) challenging actions taken by the Authority with respect to assignment of employees, use of part-time employees and refusal to pay so-called cost-of-living adjustments under expired collective bargaining agreements, and (3) seeking, in the alternative, enforcement of the arbitrator's award in its entirety or remand for redetermination of the award in its entirety. The ultimate outcome of the various challenges and, therefore, the impact of the legislation and the arbitrator's award on the Authority's future operations remains uncertain.

# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

#### (Continued)

#### (3) CONTRACT ASSISTANCE FROM THE COMMONWEALTH

The Authority is reimbursed for its Net Cost of Service by the Commonwealth. A portion of this reimbursement is provided specifically in the form of contract assistance for debt service. The Commonwealth assesses a portion of the Net Cost of Service, after reduction by the reimbursement for debt service, to the cities and towns constituting the Authority, up to the legislated limit. Contract assistance for 1982 and 1981 is summarized as follows:

##### (a) Debt Service

The legislative act authorizing the Authority to issue debt securities provides for contract assistance for the payment of annual debt service costs on bonds issued by the Authority as follows: on the bonds issued prior to January 1, 1971, the debt service is eligible for contract assistance at either 50% or 90%, as provided by contract; on bonds and bond anticipation notes issued after January 1, 1971, 90% of the debt service is eligible for contract assistance. However, regardless of when issued, contract assistance, under the current statute, will not be available on the debt service of more than \$528,500,000 of bonds outstanding at any one time. Additionally, the Commonwealth pays a maximum of \$3,000,000 for the debt service relating to BMD debt. The Authority was eligible for contract assistance relating to debt service of \$40,661,000 in 1982 and \$32,906,000 in 1981.

##### (b) Operating Assistance

The Authority's Net Cost of Service reimbursable by the Commonwealth, after deducting the debt service and commuter rail operations contract assistance, is \$183,289,000 for 1982 and \$178,929,000 for 1981 (see Note 2). The amount to be assessed by the Commonwealth for 1982 to the cities and towns comprising the Authority is limited to \$97,391,000, which is 102 1/2 percent of the amount assessed (including state borrowing charges) in 1981.

Contract assistance for commuter rail service outside the Authority's district is provided by statute each year in amounts to assure that the amounts billed to the regional transit authorities receiving the service do not exceed the portion paid on March 1, 1978. Contract assistance for commuter rail service amounted to \$8,347,000 in 1982 and \$6,601,000 in 1981 (See Note 5).

#### (4) FEDERAL OPERATING ASSISTANCE (DEPARTMENT OF TRANSPORTATION)

Section 5 of the Urban Mass Transportation Act of 1964 (the 1964 Act), as amended, provides federal operating assistance in decreasing amounts through the 1983 federal fiscal year on the basis of a statutory formula. Urbanized areas may use Section 5 funds by developing specific capital assistance and/or operating assistance projects under the statutory requirements of the 1964 Act, as defined. The Authority has been designated the primary recipient for the Section 5 operating assistance for the Boston urbanized area. Federal operating assistance amounted to \$23,200,000 in 1982 and \$26,236,000 in 1981. The Authority is eligible in 1983 for \$5,309,000 of assistance remaining from Section 5.

The Surface Transportation Act of 1982 (the Surface Act) amended the 1964 Act by replacing Section 5 assistance with a new Section 9 under which both capital and operating grants will be made. The amount of operating assistance to be received under Section 9 is subject to legislative approval. Amounts which the Authority would be eligible to receive under different legislative proposals for federal fiscal year 1983 range from \$14.5 million to \$21.5 million.



# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

#### (Continued)

#### (5) RAILROAD COMMUTER SUBSIDIES

Under Chapter 161A Section 3(f) of the General Laws, the Authority may enter into agreements with private transportation companies, railroads and other concerns providing for joint or cooperative operation of any mass transportation facility and for operation and use of any mass transportation facility and equipment for the account of the Authority.

On February 23, 1982, the Authority entered into a new five-year operating agreement with the Boston and Maine Corporation, Debtor (B & M), to provide commuter railroad service over the Authority's rail lines. The Authority has agreed to pay the B & M for direct and indirect service expenses, a management fee and ridership and performance incentives that may be reduced by offsets in case of noncompliance. Under the previous agreement which expired December 31, 1981, the Authority agreed to pay the B & M all direct costs of operating the service, plus an equitable share of indirect costs and certain incentive payments.

In the event that the Advisory Board fails to approve the annual budgetary provision for any of this service, the agreement shall terminate subject to certain labor protection obligations.

The costs and related operating assistance of commuter rail service, excluding depreciation, are summarized below:

	(\$000 Omitted)	
	1982	1981
Passenger revenues	\$15,300	\$12,933
Operating costs, excluding depreciation of Authority-owned property devoted to commuter rail service	63,247	60,380
Railroad commuter expense reflected in statement of revenue and cost of service	<u>\$47,947</u>	<u>\$47,447</u>
Less: Operating assistance reflected in the statement of unreimbursed cost of service		
Federal operating assistance related to railroad commuter operations	4,526	4,218
State contract assistance	8,347	6,601
Reimbursement from entities outside the Authority's area	923	1,510
	<u>\$34,151</u>	<u>\$35,118</u>



# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

#### (Continued)

#### (6) NOTES PAYABLE

The following notes payable were outstanding as of December 31:

1982			1981		
Due Date	Interest Rate	(\$000 Omitted)	Due Date	Interest Rate	(\$000 Omitted)
		Principal Amount			Principal Amount
Mar. 11, 1983	9.25%	\$100,000	Mar. 12, 1982	10.75%	\$124,000
Mar. 11, 1983	9.30	25,000	Mar. 12, 1982	10.22	1,000
July 7, 1983	9.65	70,000	July 7, 1982	10.375	70,000
		<u>\$195,000</u>			<u>\$195,000</u>

Notes payable of \$125 million due March 11, 1983 were refinanced at an interest rate of 5.50% (\$75 million) and 5.60% (\$50 million) due March 23, 1984.

The legislative act under which the Authority was established provides that if at any time any principal or interest is due on any bond or note issued or assumed by the Authority and funds to pay the same are not available, the Commonwealth shall thereupon remit to the Authority the amount required to meet such obligations.

#### (7) PLANT AND EQUIPMENT IMPROVEMENT PROGRAM

The Authority's continuing program for mass transportation development has projects in service and in various stages of approval, planning, and implementation with a total estimated cost of \$3.93 billion. As of December 31, 1982, projects with an estimated cost of \$2.89 billion have been approved with \$2.09 billion to be provided from federal grants, \$687 million from Authority bonds and \$109 million from other sources. As of December 31, 1982, the Authority has expended \$1.9 billion on this program which has been financed through the receipt of \$1.3 billion of federal grants, \$523 million of the Authority's General Transportation System Bonds, \$30 million of Bond Anticipation Notes and \$47 million from other state and local sources.

The terms of the federal grant contracts require the Authority to utilize the equipment and facilities for the purpose specified in the grant agreement, maintain these items in operation for a specified time period which normally approximates the useful life of the equipment, and comply with the equal employment opportunity and affirmative action programs as required by the Urban Mass Transportation Act of 1964, as amended. Failure to comply with these terms may jeopardize future funding and require the Authority to refund a portion of these grants to the Federal Department of Transportation. In management's opinion, no events have occurred that would result in the termination of these grants or require the refund of a significant portion of funds received under these grants.

Currently, the authorized debt ceiling for Authority bonds is \$660.5 million. Of this amount, \$271.5 million may be issued only once, and any bonds maturing or redeemed on or after January 1, 1984 may not be reissued, thereby reducing the amount of bonds which may be outstanding at any one time. The issuance of debt to provide the required financing for the entire program is contingent upon legislative approval of a higher authorized debt limit. Additional bond authorization needs for the entire program are estimated to be \$164 million.

As of December 31, 1982, the Authority had outstanding commitments related to the improvement program amounting to approximately \$362 million.

# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

#### (Continued)

#### (8) SETTLEMENT FUNDS

As part of the Authority's program for mass transportation improvement, the Authority entered into a grant contract with the Urban Mass Transportation Administration (UMTA) providing for the purchase of 175 light rail vehicles, spare components, and various engineering support at an estimated project cost of \$68,305,000, \$48,084,000 to be provided by an UMTA grant. In 1972, the Authority entered into a contract with a manufacturer for the purchase of these vehicles, components and related engineering support. The 135 vehicles delivered pursuant to this contract were plagued by a variety of operating and maintenance problems which led to a series of disputes between the manufacturer and the Authority. In 1979, an agreement was reached with the manufacturer which released the manufacturer from all liability related to the vehicles in return for modification parts and a cash settlement.

The Urban Mass Transportation Administration has concurred with the agreement provided that the cash settlement and associated interest income will be used along with funds remaining from the original grant to provide 175 vehicles with equivalent capacity available for revenue service. Authority management intends to utilize the funds to modify existing vehicles and procure additional vehicles to meet this provision.

At December 31, 1982, the amount shown as settlement funds reflects the settlement proceeds from the manufacturer plus interest realized on the proceeds since the date of the settlement, less expenditures made for eligible projects costs.

#### (9) LOANS PAYABLE TO FEDERAL DEPARTMENT OF TRANSPORTATION

In 1973, the Authority purchased 145 miles of right-of-way and related properties in Eastern Massachusetts from the Penn Central Railroad. This purchase was financed with a \$19.5 million (6.875% interest rate) loan from the Federal Department of Transportation.

In 1976, the Authority purchased certain assets of the B & M, including right-of-way, revenue equipment, track and related properties. The cost of \$39.5 million was financed with a \$24,173,000 (8% interest rate) loan from the Federal Department of Transportation secured by the assets purchased, a \$12,262,000 Federal Department of Transportation grant and \$3,065,000 of local funds.

Of the property purchased, right-of-way and yards of \$12,240,000 are not presently in transit use by the Authority and are being held for future expansion. The properties acquired are pledged as security for the loans.

In January, 1983, 80% (\$46,190,000) of the outstanding principal and interest of these loans was forgiven by the federal government pursuant to the Surface Act. The remaining 20% of the outstanding principal and interest is to be forgiven under the Surface Act contingent upon the Authority committing an additional \$16,313,000 to public transportation projects. The amount which the Authority must expend increases by approximately \$50,000 for each month in which the funds are not committed for these projects. The amount of principal and interest forgiven has been reflected as a federal grant as of December 31, 1982.



# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

#### (Continued)

#### (10) RETIREMENT PLANS

The Authority provides pension benefits to employees through a contributory defined-benefit retirement plan. The plan currently requires the payment by the Authority of an amount equal to approximately 12% of the total payroll of the members of the plan. The amount of employee and Authority contributions to the plan is intended to fund normal cost, interest on the unfunded liability and administrative expenses. The Authority is not legally obligated to fund the unfunded actuarial liability which approximated \$174,926,000 as of December 31, 1981 and \$177,520,000 as of December 31, 1980, the dates of the latest actuarial valuations.

The plan was amended effective December 7, 1980 to increase the percentage of average compensation used in computing retirement benefits to 1.95%, and to redefine compensation for benefit purposes to exclude overtime pay. The effect of these changes on pension expense is not available.

Annual pension expense for the plan is computed based on a projected benefit method using a compounded annual interest rate of seven percent and a salary increase factor of five and one-half percent. The cost of the plan to the Authority was approximately \$17,787,000 for 1982 and \$18,505,000 for 1981. The accumulated plan benefits and plan net assets, determined as of December 31, 1981 and 1980, are as follows:

	1981	1980
Actuarial present value of accumulated plan		
benefits:		
Vested	\$350,158,000	\$324,593,000
Nonvested	6,095,000	6,588,000
	<u>\$356,253,000</u>	<u>\$331,181,000</u>
Net assets available for benefits	<u>\$260,582,000</u>	<u>\$251,430,000</u>

The Authority has also entered into agreements with certain salaried employees to provide supplemental pension benefits after retirement. Employees must have at least ten years of service and be eligible under the provisions of the contributory retirement plan to receive these benefits. At December 31, 1982, approximately 700 employees were either receiving supplemental benefits or will be eligible to receive them upon retirement. Annual expense under this plan is computed based upon an entry age normal method, forty year amortization of unfunded actuarial liability, an annual interest rate assumption of nine percent and a salary increase factor of seven percent compounded annually. The Authority's practice, under this plan, is to provide a reserve for pension costs as they accrue.



# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

#### (Continued)

Supplemental benefits expense was \$1,062,000 for 1982 and \$1,110,000 for 1981. The accumulated plan benefits and plan reserve as of January 1, 1982 and 1981, the dates of the latest actuarial valuations, are as follows:

	1982	1981
Actuarial present value of accumulated plan		
benefits:		
Vested	\$6,684,000	\$6,240,000
Nonvested	1,852,000	2,397,000
	<u>\$8,536,000</u>	<u>\$8,637,000</u>
Reserve available for benefits	<u>\$2,116,000</u>	<u>\$1,907,000</u>

The retirement fund benefit, which affects the amount of the supplemental pension benefit, was increased in 1981. This increase reduced prospective benefits under the supplemental pension plan.

Additionally, the Authority is obligated to pay pension and medical benefits to retired employees not eligible for membership to the retirement plan and life and medical insurance costs of retired employees. The expense to provide these benefits was \$6,450,000 in 1982 and \$4,723,000 in 1981.

#### (11) PROVISION FOR POWER GENERATING EQUIPMENT

In 1981, the Board of Directors announced its decision to discontinue steam generation operations at its South Boston Power Station, dismantle the steam-powered boiler generators and sell them. In 1981, a provision was made to operations for the cost of the steam generating boilers and their installation, net of an estimate of the proceeds to be received upon their sale. In 1982, an additional provision was made to reflect additional costs of the shutdown.

The cost of the boilers and their installation was 80% funded by the federal government. The Authority intends to use Construction funds to the extent, if any, the government requires repayment of those funds.

# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## NOTES TO FINANCIAL STATEMENTS

### DECEMBER 31, 1982

(12) **SUPPLEMENTARY OPERATING EXPENSE INFORMATION**

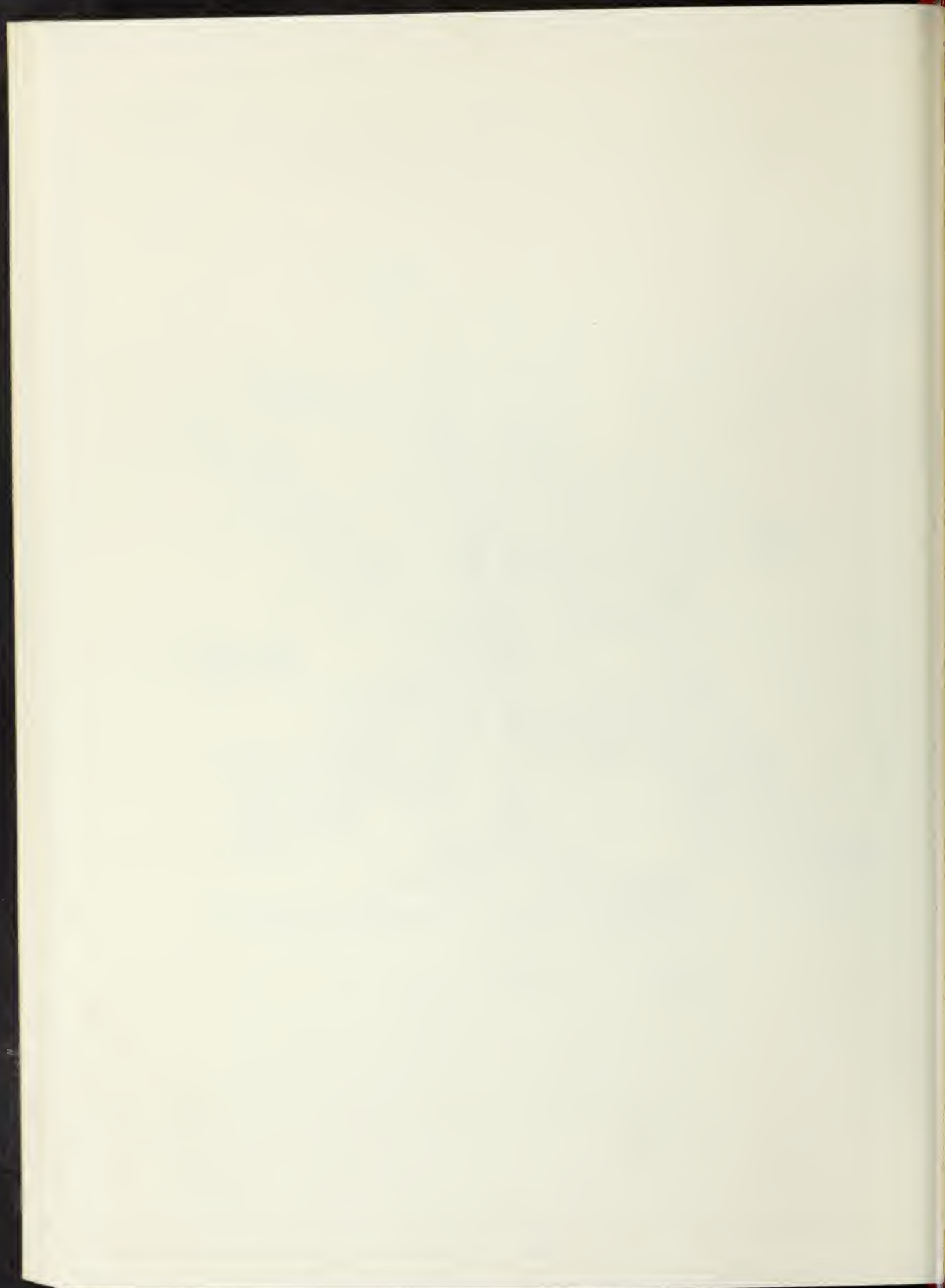
Operating expenses classified on a functional basis are as follows:

	(\$000 Omitted)	
	1982	1981
Vehicle operations		
Wages	\$ 53,039	\$ 55,862
Other	59,279	59,967
	<u>\$112,318</u>	<u>\$115,829</u>
Vehicle maintenance		
Wages	\$ 25,208	\$ 24,825
Other	26,377	24,654
	<u>\$ 51,585</u>	<u>\$ 49,479</u>
Non-vehicle maintenance		
Wages	\$ 22,327	\$ 17,899
Other	15,212	15,143
	<u>\$ 37,539</u>	<u>\$ 33,042</u>
General administration		
Wages	\$ 16,721	\$ 16,812
Other	25,888	25,941
	<u>\$ 42,609</u>	<u>\$ 42,753</u>
Depreciation and amortization	\$ 36,538	\$ 31,930
Railroad commuter expense, net	47,947	47,447
	<u>\$328,536</u>	<u>\$320,480</u>









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